AMERICAN VETERINARY REVIEW.

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EDITORIAL.

THE BLACKMAILING OF VETERINARIANS BY HORSE DEALERS.

In a recent issue of the REVIEW appeared a letter from a young veterinarian inquiring as to the truth of a story brought to him by a transient dealer in horses who had been disposing of a carload in the New York market in which a sweeping charge of dishonesty was made against the profession of that city in the matter of bribe-taking when called in to make examinations for soundness. The dealer in question had asserted that the practice was general; that almost all veterinarians exacted a fee from the seller as well as from the buyer, and that the examiner had to be taken into consideration when the price of the horse was fixed upon. The REVIEW replied to its correspondent by saying most emphatically that he had been misinformed; that the profession of this city was as a rule composed of men of honor far above such disgraceful practices, and that in the matter of character they were the peer of the members of any profession or calling. It freely acknowledged that it was not without its disreputable members, just as every other branch of business or society; but that they were few and not at all representative; men who were failures in the legitimate lines and who hung around the dealers as barnacles do upon the hulks of ships, which in time are washed or scraped off and disappear from view.

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It would be just as unfair and unjust to say that all dealers were dishonest and unscrupulous because a few of them resort to disreputable methods in their efforts to make dollars. It is extremely nauseating to an examiner to have the seller attempt to force money upon him whenever he finishes an examination favorable to his interests, and he does so in such a friendly spirit as to tempt the uninitiated; but the moment that the unwary veterinarian accepts those forbidden dollars, just that moment he loses his self-respect and becomes a dependent tool of that dealer. At the next examination he dare not give an opinion contrary to the seller's interest, for the chances are nine out of ten that he will attempt to sell the animal over the veterinarian's head by attacking the latter's character, and give the buyer to understand either by innuendo or by direct accusation that the sale is interfered with because at the low price asked for the animal he cannot afford to fee his doctor. If it is necessary to make his statement more forceful he produces the original check with the veterinarian's endorsement, or if it had been a cash transaction the item is shown upon the cash book. While this disgusting method of doing business may be accepted as the wages of sin, it nevertheless hurts the reputation of the profession as a whole, and the members should and do frown upon it; but possibly not to the extent which it deserves. If the associations took it up, and punished by expulsion any of its members who were proven to be guilty of bribe-taking they would be only doing their duty to their honorable and beloved profession.

But this is not the worst of it. The guilty are very liable to reap as they have sown, and those who play with fire run the risk of being burned. If, however, the innocent are submitted to the same kind of treatment, it is surely time to call a halt. Whenever a veterinarian's services are sought by a client for the specific purpose of obtaining his professional opinion upon the soundness of an animal, and that veterinarian makes a careful examination and delivers to his patron his honest judgment upon the qualities of the prospective purchase, he has performed

a solemn obligation, and whether it be favorable or otherwise to the seller, his character should be unassailable. To the everlasting credit of most New York dealers it may be said that such is the case; they may feel disappointed and angered for the moment, but in the majority of cases they have a higher regard for the ability and character of the examiner than if an unsoundness were winked at because of the few dirty dollars which were to pass from seller to examiner after the buyer had been buncoed by their united conniving. In a few instances it is the practice of the dealer to attack the integrity of every veterinarian who gives a decision adverse to his interests by insinuating that the price at which the horse is being sold precludes the possibility of his giving the examiner a sufficient fee to secure the proper certificate, etc., etc.—thus stabbing an innocent man in the back, and dealing the character of the victim a blow against which he has no means of defense, as the matter is so delicate that it will probably never reach his ears. It is seldom, however, that a dealer would be so hazardous as to put such a statement in the form of a letter, and that the one receiving it would turn it over to the party maligned. But such an instance has recently occurred, and the outcome of it is a suit for $10,000 damages, the papers in the case having been served, and matters are shaping for a prosecution with vigorous determination. We trust that no compromise will be entertained, and for the benefit of the profession at large we hope that nothing will be left undone to prosecute the offender to the full extent of the law. Murder of character is worse than physical assault, for it strikes in this case not one but all.

THINK OF IT IN THIS LIGHT.

American veterinary journalism will not permit of the luxury of canvassers for patronage; veterinary editors cannot afford the time to solicit subscribers by correspondence; yet they are very much needed for their financial, moral and literary support. Every subscriber *should* feel as much interest and responsibility for the success of the journals as the editors

do, for it is for their mutual good that they are published. The editors contribute more than their share by doing the work of compiling, corresponding, and guaranteeing deficiencies. Each subscriber should feel that the least he can do is to see that his neighboring practitioner supports one or more of the journals, besides contributing items of interest and value for the good of all. The REVIEW needs more subscribers. The more it gets the better REVIEW it will be. Have you spoken to your neighbor about it?

PROF. WILLIAMS' translation of Schmidt's important article on "Parturient Paresis" will be concluded in the December REVIEW, followed in the same issue by some interesting case reports of the treatment by Prof. Schwarzkopf, which will be brought down to the time of publication.

ORIGINAL ARTICLES.

PARTURIENT PARESIS.

(THE SO-CALLED CALVING-FEVER, OR PARTURIENT APOPLEXY.)

STUDIES AND INVESTIGATIONS INTO ITS CAUSE AND HANDLING.

BY J. SCHMIDT, VETERINARIN, KOLDING, DENMARK.

Translated for the American Veterinary Review, by W. L. WILLIAMS, *New York State Veterinary College.*

(*Continued from page 455.*)

In over eating recovery is often attained if the cow is allowed neither food nor water, if she receives food, if even only hay or straw, this must force a part of the accumulated rich food from the stomach into the small intestine. This occurs in a still higher degree if the cow is permitted to drink water, since this acts not alone through pressure, but also washes a part of the grain with it into the intestinal canal, and at the same time favors fermentation. By distributing so rapidly the gas-

tric contents in the larger part of the intestinal canal there necessarily occurs a more rapid absorption not only of the food elements but also of the injurious products of decomposition.

Since it occurs that the development of the disease is favored by so rapid a distribution and fermentation we may conclude that the etiological moment which plays the chief rôle in this form of the disease is the absorption of too large an amount of a substance acting as a poison which has developed from the great mass of nutritive food during digestion, a substance which must also be formed in a normal condition in the intestinal canal only in non-poisonous quantities.

That this view of the pathology of over eating is right is also verified by the recorded investigations of numerous experimenters of recent date regarding the function of the liver, especially its antitoxic powers upon the poisonous materials which are carried to it by the portal vein from the intestinal canal. I refer especially to the recorded report upon the importance of hepatic diseases to the organism as a whole by Professor Kitt in Vol. 7 of this monthly, page 171. In the light of these facts it is easy to understand how the nervous symptoms occur in the over eating of cows. Since so great an amount of toxic substance can develop in the digestive canal after an overfilling of the stomach with ordinary food substances, that they attain a pathogenic power and since a striking resemblance exists between the symptoms after overgorging and those of calf fever, it must still be considered if calf fever is possibly caused by such a toxic substance existing in the alimentary canal. I have consequently repeatedly sought for such a causative connection, but have not been able to find any convincing reason for this except the secondary development and absorption of toxic substances which could be caused by interference in the digestive functions, especially also because the disease is regularly connected with the time of calving.

Another affection analogous to overeating must apparently be referred to a specific toxic substance*, is that form of hæmaglobinuria (hemoglobinurie

Vide—Dieckerhoff's Auschanung, ref, in Maanedsskrift fur Dryläger Bd. 8, S. 181.

or azoturia) of horses which is generally designated nephritis by us. The most diverse views also exist regarding the etiological relations of this malady. Taking cold is most frequently considered the cause or rather as the exciting cause. On the other hand there is almost no difference of opinion as to the manner by which the disease develops and the course it pursues, and even in the way in which the disease develops and in the varied courses it pursues we have important indications of the etiology.

As it is known the malady occurs as a rule in well nourished horses, on a drive, after having previously stood at rest for a longer or shorter period. If such horses are hitched to a vehicle they are often restless and exert themselves beyond need. After a brief exertion, about quarter of an hour, the malady asserts itself by the horse losing its energy, does not bear on the bit as formerly, sweats profusely, somewhat stiff in the posterior parts and to a degree uncertain in its movements. If the driver is observant at this period and comprehends in a degree the import of these symptoms, he will stop, unhitch the horse, procure a stall for him at the nearest yard if possible, have him rubbed and blanketed, and if possible attended by a veterinarian. In the course of an hour or two the horse materially improves and after 3 to 4 hours as a rule will have wholly recovered. But if the driver is unobserving or perhaps misinterprets the symptoms, he drives farther or even uses the whip in order to reach his destination, causing the progression of the horse to become more and more feeble ; he finally falls down and remains recumbent, shows restlessness and uses the anterior limbs without being able to get up. In this case the disease ends fatally or in the most fortunate instances continues for several days to be followed largely by a persistent paralysis of some muscle groups. The various courses pursued by the malady consequently depends upon whether the horse is rested as soon as the disease appears or if he is driven farther.

Since the disease arises during locomotion, and can also be aborted by rest or by continued movements can be developed into a more severe grade, it seems to me beyond doubt that the pathogenic substance is developed by motion. The muscles are, after the preceding long period of rest, brought into increased activity during the vigorous movements of the horse, from which follows an exalted tissue change with breaking down of the albuminoids, perhaps in a manner that some of these products of decomposition acquire the power to exert a solvent action upon the coloring matter of the muscles and the blood, as well perhaps as other injurious properties. These toxic substances cannot be excreted from the blood by the depurative organs, as rapidly as it is absorbed from the muscles. Again in this case one of the chief symptoms is an evident paralysis.

Just as in cows after over eating, and the increased absorption of substances in such quantities as to act as toxins, though not ordinarily poisons, marked nervous symptoms, especially paralysis, are observed, likewise we find in horses gross nervous symptoms especially paralysis of the posterior extremities, due to the suddenly exalted muscular activity with the consequent increased formation of the products of tissue change. These theories could also be extended to other affections which likewise have their origin in auto-intoxication, *e. g.*, the laminitis of horses ; but since I wish here merely to show by comparison with calf fever, that a self intoxication with like symptoms to this disease can origi-

nate through an exalted physiological activity of the various organs, I will confine myself to the foregoing examples.

But if the symptoms of overgorging are brought about by an increased absorption of substances formed by the digestive activity, yet they are scarely due to a pure auto-intoxication, if we would exclude all bacterial influences. For the bacteria existing in the alimentary canal and taking part in the digestive processes, can play an important rôle through their products of decomposition. But in hæmoglobinuria it must be a process absolutely free from bacterial influence which works in or through the muscles, and hence, in relation to the foregoing presumption, a pure auto-intoxication.

I will barely recall here that the paralysis in acute infectious diseases also has a toxic origin.

From the foregoing it follows that under certain conditions aside from other products of decomposition, a larger quantity of a specific toxic substance can develop than the organism is competent to at once neutralize and excrete. At the same time we saw that the substance which was considered the cause of calf fever, could probably come neither from the uterus nor digestive tract.

We must then seek elsèwhere for the cause of parturient paresis. There remains only the udder as the most probable source of origin.

All conditions which favor profuse milk secretion during or after birth, likewise add evidently to the disposition to milk fever. The etiology of the disease is therefore to be sought in an abnormality which in one way or another is connected with the secretion of milk during the colostral period. The parturient apoplexy occurs, therefore, as is known, after a sud-treatment, that by the one or the other inciting cause a partial detachment of epithelial cells ensues. Likewise it is noted at times, that parturient apoplexy first shows itself 10 to 16 days after birth, indeed in very rare cases, even six months after parturition. Although such cases usually tend to assume a very pernicious type, I have however seen two cases which pursued an equally typical course under antitoxic therapeutics as in cases of the ordinary character. Although the symptoms in the cases named are throughout similar to those observed in parturient paralysis arising under ordinary conditions, the tendency might be to believe, that the cause is not identical in these cases

with the typical parturient apoplexy. But when I have observed the typical course after the treatment (compare No. 13), I entertain no further doubts from this standpoint.

The products of decomposition are practically always poisonous wherever they are formed and whatever their chemical constitution may be. The toxic substances endowed with a specific action which can induce quite characteristic symptoms of disease are in all probability formed also in minimum quantities under normal conditions, along with other products of tissue change. But only when it is formed and taken up in larger quantities than common, and chiefly if the neutralization and excretion fails, it reveals its presence through morbid symptoms, instead of inducing relatively increased absorption. This can occur in milk fever because of the one or the other exciting cause.

The physiological limit for the neutralization of excreted toxic material or the depurative power of the liver, the kidneys and other organs can be easily overstepped by self-intoxication, as we have seen in case of the activity of the digestive tract and muscular system. Calf fever of a mild type occurs indeed, more frequently than is believed. That is, we occasionally see in the cow, without other evident reason, a sort of inert digestion after parturition, in connection with retained afterbirth, and a certain depression of the nervous system, languid expression, weariness, feeble movements, yet without any marked paralytic symptoms yet showing uniformly a subnormal temperature. If one attempts in these cases to remove the afterbirth, he will be surprised to observe that the uterus has scarcely contracted at all since parturition and that the afterbirth is readily detached. At times similar cases are met with, where the placenta has already been expelled in which however, the uterus has not contracted and where likewise the temperature is relatively low. I believe that such cases represent a milder type of milk fever.

Those cases, in which no evident symptoms of paralysis appear, probably have their foundation, not alone in that only a minimum of the toxins become developed, but as readily also in that the toxin has a different composition. In the different

cases of this affection, even if it assumes the worst type, the toxin exhibits a stronger affinity, now upon this, and then upon another organ; also the temperature is at one time distinctly higher, at another equally lower than normal. The chemical combination of the toxin is therefore probably variable, so that now and then changes can occur in it, by which it can also have a variable poisonous effect upon the different organs, according to the preponderance of the one or the other form of toxin.

When the cow, by all possible means, is brought to a high state of milk production, and thereby passes beyond the limit of physiological equilibrium either through the sudden diversion of the blood stream after calving or as a result of the existing condition, the equipoise can probably be destroyed by a trivial condition, through which the formation and absorption of toxins is increased or their neutralization and discharge checked. "Taking cold" has long been recognized by practical experience as one of the most important exciting causes; to which we must add an over-abundant and excessively nutritive diet, and after birth, the drinking of excessive quantities of water or changes in food with the resultant digestive disturbances. Also the neutralizing functions of the liver become hereby lessened, while at the same time greater demands are placed upon it.

According to the investigations of B. Boygild and V. Stein* it has been shown, that when the cows are turned into the pastures in autumn and are exposed to the cold as well as being put upon the succulent autumnal grasses, the butter possesses a very small amount of volatile acids, which is immediately improved to a degree, if the cows are stabled without a change of food (soiled) or still more, if allowed winter food at the same time. Since temperature as well as variations in diet can have an influence upon the constitution of the butter fat, the lacteal cells must be especially influenced by these factors. Heat and cold, light and darkness and their consequences, which influence the composition of the blood at the different seasons, I will only

* Tidsskrift for Landokonomie, referirt von H. Faber in: Ugeskrift for Landmand Nr. 16, 1896.

mention here, because it follows that the lacteal cells can be influenced by thermal variations.

I must further add to the exciting causes mentioned the agency of too early or too intense milking, by which the functions of the udder are greatly excited.

I have likewise had the good fortune to have my attention directed to the question whether the cows yielding milk richer or poorer in fat have a special predisposition to milk fever. In case of patients Nos. 10, 14, 27 and 38, notes will be found showing the quantity of butter fat in the milk. Also P. A. Mörkerberg has been so kind as to furnish me with the following data, on the proportion of fat contained in the milk of a cow in a dairy establishment in the island of Fuhnen. The milk from this cow yielded in 1893 3.37 per cent. and in 1896 4.04 per cent. of butter fat. On the 17th of December, 1895, the milk contained 3.40 per cent. fat, and in the first two months after the advent of the disease it had become very fat; thus it contained, for example, on the 21st of March, 4.87 per cent. and on 24th April 5.63 per cent.; but after that it gradually decreased. What rule, if any at all, the richness in butter fat plays in the predisposition to the disease must be determined by further observations.

When the toxin formed in the udder is taken up into the blood it circulates throughout the body in it, and acts, as in over-eating and like the poisonous substance developed by hæmoglobinuria especially upon the central organs of the nervous system and the muscular system and through these, upon the functional powers of various organs. The toxin, as it is formed, is gradually neutralized and expelled probably in several of the organs of the body. It can also probably become partly neutralized, like the poisonous substance of overgorging, by entering the general blood current and passing gradually through the arteries of the digestive organs and their capillary net-work are forced to the portal vein and liver. A part of the toxin will, perhaps, be expelled also by the milk glands themselves, without gaining access to the organism, as it is indeed well known that cows, which are giving milk, are on account of the milk secretion more resistant against various poisons, than other animals. But what is excreted in this way cannot be greater in quantity than that which the digestive organs of the calf are in a position to neutralize. It is observed now and then that new born calves are fed on such milk, without suffering therefrom.

With the advent of the disease in the organism begins a decreased secretion of milk and detachment of colostrum corpuscles. The entire process of tissue change becomes less intense. Thereby the development and absorption of toxins must likewise decrease and as soon as neutralization and excretion can keep pace with the absorption, recovery ensues. It is well known, that the quicker after birth under ordinary conditions, the malady appears, the more dangerous it is. This can be explained by the fact that the time of the course of the disease coincides with the most abundant colostrum period.

The highest point of the quantitative and qualitative colostrum formation can occur somewhat later, but generally does not reach so great an intensity in such cases, as in the course of the first 24 hours. Partly on this account, and partly because patients during the course of the disease gradually approach nearer and nearer the close of the colostral period, cows which have been attacked with the disease 2 or 3 days after calving recover more frequently than those which become affected during the first 24 hours. Upon the same ground it can be explained that cows, which live beyond the third day of the disease, ordinarily recover, unless other secondary complications supervene. But even when pathogenic quantities of toxins no longer find their way to the blood, several hours must yet elapse before the toxins already taken into the blood become neutralized and thrown out and recovery can occur.

The rapid passage of large quantities of toxins into the blood current can, on the other hand, quickly cause the death of the animal; the neutralization and excretion can not keep pace with the formation, and the poisonous substance becomes accumulated in such quantities in the blood, that it has the power to produce complete paralysis of the heart. If, however, the development of the toxin proceeds in not too great a volume but more continuously during a longer colostrum period, then the disease pursues a more protracted but less intense course and ends as a rule in recovery. In some cases, however, the poisonous substances seem to have produced such gross material

changes in the nervous system, that, as is seen in hæmoglobinuria, there remains a paralysis extending to several muscular groups, after the other symptoms have disappeared.

The treatment of calf fever, as practiced up to the present time, has produced nothing which exerts the least influence upon the course of the affection. If one attended a milk fever patient before the disease had reached an advanced stage, he must still give the opinion, regardless of the early treatment, that the patient would become worse before improvement could be expected. It has consequently been necessary to constantly seek for new, and if possible, better therapeutic agents and an extraordinarily large number of drugs have been tried against this affection. For a time this or that remedy has given apparently favorable results, but later has failed to prove its value. We may therefore conclude that it was the character of the malady, was its benign or malignant course, which has differed at different times, and has led to the recovery of a greater or less number of affected animals, but clearly expressed, one must say, that the amount of toxins which developed in the udder, as well as their chemical constitution was different. These periodical variations can be attributed in a measure, to the greater or less nutritive value of the food supplied and by its power to stimulate the milk secretion; and the quality is very probably dependent upon various atmospheric influences on the thermal variations, of low barometric pressure * and on all that can contribute to influence unfavorably the constitution of the blood and through it the lacteal cells.

During the course of calf fever there comes, as is known in almost all cases, a shorter or longer period where life and death hangs in the balance; the scale sinking or rising now on this, now on that side, so that even the experienced veterinarian can only with difficulty give a merely tentative prognosis. It is also generally recognized that the usually imperceptible action of the many medicinal agents, which have been used for milk fever, have made most veterinarians very skeptical, so that

* L. Andersen, Tidsskrift for Veter. Bd., 23, S, 177.

many of them after a trial of the drastic remedies, have changed to neutral medicines with which they have obtained quite as favorable results as formerly. This indicates that in many cases recovery occurs wholly through natural aid and that consequently no energetic interference is required for the aid of these. It is clear then that if we can contribute to the force against the cause of the disease, that is the development of toxins, the curative results must be better than before.

What is demanded of a specific medicinal agent, is, that the course of the disease shall be shortened, and the majority of the affected animals recover, when it is possible to have the handling of the disease in its early stages. But it may occur that before treatment has begun, so great a volume of toxins has been absorbed and such an extreme destruction of function has taken place in various organs, that a complete paralysis of the heart must follow. It is not known either if the disease is preceded by certain complications with various diseased conditions like hepatic diseases, cardiac defects, etc., or there may occur during the course of the malady other accidents such as articular strains, rupture of muscles, wounds and especially foreign-body pneumonia, in consequence of the entrance of food particles or medicine into the respiratory passages.

The treatment must be directed according to the etiological conditions here proposed, primarily against the quantitative and qualitative greatly exalted activity of the udder. The results must then indicate whether the udder is really the organ whence the disease has its source. It is well known that the milk secretion can be checked by the internal administration of potassium iodide. I have consequently, after first satisfying myself as to the cause of the disease, attempted to apply this agent against milk fever. I have used potassium iodide subcutaneously in several cases, but only in a dose of 2 grammes (30 grains). I have not been able, however, to show a specific curative action.

The most direct manner, if it could be carried out, to oppose the morbid activity of the mammæ would be to inject the medi-

cine into the udder. I knew, however, through the contributions of Gillebean and Hess * that most drugs irritate the udder and that caution must be used in introducing medicines into that organ. Since I have proposed that the disease has its origin in an abnormal secretion of colostrum, it naturally followed to test the injection of a potassium iodide solution since thereby the secretion and the correlated forced casting off of the colostrum corpuscles thereby decreases and the iodine combinations would exercise a neutralizing influence upon the toxin. Iodine salts promotes, as is known, the resorption of pathological accumulation by splitting up within the organism into free iodine which combines with the pathological products.† How the combination acts is not yet fully known. But I think myself warranted in supposing that in this way compounds can be formed which can no longer possess a ptomaine-like character, and that such iodine compounds in the lacteal cells would form first and most easily by the application of iodine in the udder itself. But it can be doubted if we are in a position to introduce such a solution into every part of the udder; likewise it must at first meet with a milk stream, with which it must mix before it can penetrate deeper. It would not suffice to inject the medicine into the udder, as is usual, with a small syringe, since a greater volume must be introduced in order to penetrate to every part of the gland. I devised, therefore, an infusion apparatus for this purpose. It consists of a milk catheter of comparatively large size, a rubber tube about 1 ½ meters (5 feet) long, and a glass funnel.

(*To be continued.*)

THE "Proceedings of the 35th Annual Session of the United States Veterinary Medical Association," will, we are informed by Chairman Williams, be ready for mailing to the members by November 1. The copies will be bound in cloth this year instead of paper, as formerly, and from advance sheets it appears to be mechanically in advance of previous issues.

* Ref. von Friis in: Maanedsskrift for Drylager Bd. 7, S. 152.

† Fröhner. Arzneimittellehre, 1890, S. 262.

SLAUGHTER-HOUSE INSPECTION.

By S. Stewart, M. D. V. S., Kansas City, Kansas.

A Paper read before the 35th annual meeting of the U. S. V. M. A. at Omaha, Neb., Sept. 6–8th, 1898.

The establishment of slaughter-house inspection by the government at the large slaughtering establishments, doing a foreign and interstate business, has served to attract attention to the necessity for careful inspection at all slaughter houses supplying cities and towns with animal food products. In order that slaughter-house inspection may be all that public health requires that it should be, several conditions must be harmoniously conjoined. There must be legal authority to conduct inspection and enable the inspector to enforce necessary regulations. There must be a substantial moral support on part of the public, both general and official. The inspector must be thoroughly competent.

If inspection be established under the authority of a local or State Board of Health, the power for enforcement of its rules is usually ample and easily applied. When the authority for inspection is through municipal ordinance, political influence is a forceful factor, often rendering uncertain the official position of the inspector, and not infrequently determining a vacillating and biased service, with laxness where financial or political force is applied.

If inspection be intelligently and honestly conducted, and the public kept informed as to the wdrk done through official reports, public sentiment will lend strong moral support to this kind of sanitary service. No one thing will create stronger public approval and more general satisfaction than the assurance that the food upon the table is not tainted with disease.

The qualifications of the inspector for the duties of his office are important factors in the establishment and maintenance of a service which fully protects the public and yet does justice to the owners of animals slaughtered. He should possess a thorough knowledge of the anatomy of domestic animals and have a good working knowledge of comparative pathology. He

should be familiar with the ante-mortem symptoms and post-mortem lesions of the more common diseases and possess the mental acumen to trace out and determine the rarer ones, and withal judge fairly as to the influence any disease or morbid condition may have on the wholesomeness, as human food, of the flesh of an affected animal. He must be honest, courteous and discreet. Inspection may be carried on without serious conflict with the slaughterers if the inspector condemns with discretion, and has the tact to explain in simple language why he condemns when objection is raised by the butcher or owner. In this way they may be led to have confidence in the inspector and will manfully bear their losses when unfit carcasses or organs are condemned and destroyed as food.

We may class as positively dangerous, both for food and to handle, the carcasses of animals affected with anthrax, rabies, septic conditions and the malignant œdema and foot-and-mouth disease of Europe; as dangerous and suspiciously unwholesome, those affected with tuberculosis, actinomycosis, Texas fever, erysipelas, sheep pox, hog cholera and swine plague, or any disease producing elevation of temperature; also beasts which have died before slaughter or must be killed to save them, and flesh saturated with œdematous fluid or blood.

There is a class of meats which is decidedly disgusting and loathsome, though not positively harmful as food, such as the flesh of animals which were drowned, smothered, or died of apoplexy; females in the parturient state, or its near approach; unborn or recently born young; animals fed on loathsome offal; flesh which emits an unpleasant odor; and flesh containing parasites, such as trichinæ and cysticerci, the last two being harmful if consumed raw.

Flesh may be considered wholesome in cases of recent injury, localized diseases of single organs of a chronic, non-malignant character, or localized parasitic invasion, the parts involved having been removed.

The interest of the owner of meats under inspection is to be considered in connection with the health and prejudice of the

consuming public. It will be observed that popular and personal prejudices play quite an important rôle in this connection. Persons not accustomed to seeing animals slaughtered and the parts or organs prepared for food, are often disgusted with many conditions and products, which are perfectly wholesome; and others, who do this work or constantly see it done, become accustomed to and consider wholesome many conditions of flesh which may be decidedly harmful or loathsome to the general public. The public should be properly protected from the ignorance or rapacity of the butcher, and the owner or slaughterer of animals be protected from the ignorant prejudices of the public.

Examinations made before slaughter are highly important. Considerable enlargements of any of the tissues about the head, neck and limbs are easily discernible; gangrenous wounds and skin diseases will be noticed, and the sick or bruised animal which gets out to one side by itself, or lies down while the others stand or walk about, will not be overlooked; also the class known as "downers," or cripples, which cannot or will not walk to the slaughter house, may be seen. Special attention should be given to such animals during the post-mortem inspection, for the wily butcher knows how to skillfully cut away evidences of disease while removing the skin, limbs and head.

If the slaughtering establishment be a small one, and the examiner has abundant time to leisurely watch the entire process of slaughter, no abnormal or diseased condition need escape his notice, but in large abattoirs, where 100, 200 or even 500 animals are slaughtered per hour, the process of dressing is done in parts, at several points along the journey of the carcass from the killing bed to the refrigerator. The head, feet and visceral organs are quickly removed to another part of the establishment, so the evidence of disease must be seen quickly, if at all, and the carcass of which they were a part be identified. Still greater acumen must be exercised in small abattoirs where the carcasses are dressed and viscera set aside to be examined at the convenience of the inspector.

During the transportation of cattle by railroads to the mar-

kets many are injured. These injuries vary from slight bruises to extensive contusions of the soft parts and fractures of the ribs, vertebræ or bones of the extremities. Ten to thirty hours after infliction these injuries are manifest in the live animal by swelling and puffiness over the seats of contusion, and if extensive the animal moves about very stiffly, as though foundered. If the ribs are broken the injured side is protected as much as possible by muscular rigidity on that side. If a femur, ilium or vertebra is fractured, the animal will be unable to rise, and must be hauled from the car or yards to the slaughter house in a cart. Sometimes cattle get down in an over-loaded car and cannot get up, owing to the crowded condition of the car. They are trampled on by the others and after much struggling become discouraged and will not get up; or during a rainy or an icy period cattle slip, violently separating the hind legs at right angles to the median line of the body, rupturing the muscles in the pubic region, perhaps fracturing or dislocating the femur or other bones. These animals are known as "downers." When slaughtered the cases of severe injury of more than twenty-four hours' standing do not bleed so freely nor so perfectly as a sound animal. When the skin is removed contusions recently inflicted are easily discerned, the subcutaneous connective tissue and fat being infiltrated with blood escaped from ruptured capillary vessels. If the contusions be extensive as when a bullock gets down in a car and is repeatedly trampled upon, the fat and connective tissue of the back and sides of the body are torn and pulpified to such a degree that the skin is removed from the injured parts by very slight traction, and the surface of the body is discolored over large areas. The contusions may extend deep into the muscular structures, even through the thoracic or abdominal walls, being accompanied by hæmorrhage into the parts, pulpification of the muscle structures and sometimes fracture of ribs. If the injured animal be not slaughtered before febrile conditions are established, the injured tissues will become infiltrated with an exudate, varying in color and consistence from a gelatinous amber-colored serum to a thin, dirty fluid,

with sometimes a disagreeable odor. The expert butcher deftly removes the hæmorrhage-stained, infiltrated and torn fat and connective tissue overlying the muscular structures, also the superficial muscles, if coagulated blood and serum be found in and beneath them; then with a brush and plenty of very hot water the smaller hæmorrhagic discolorations are softened and washed away, the parts presenting a nearly normal color when dried and placed in a refrigerator until thoroughly cooled. When the injuries are recent, as indicated by the absence of the products of inflammation, the bruised and torn parts can be cut away, leaving the remainder of the carcass wholesome food and not offensive in appearance. In the cases where the serous exudate is extensive or malodorous, or where rigor mortis is established before the skin can be removed, changes have taken place in the fluid and solid tissues which render them suspiciously—if not certainly—dangerous for food, and they should be condemned.

The class mentioned as "downers," or cripples, naturally require especial attention, yet when slaughtered and dressed it is often difficult to discern any sufficient reason why some would not or could not walk to the shambles, so slight are the tangible lesions. Many of them present lesions of the bones and contiguous soft parts, and the same principles apply in determining the wholesomeness of the flesh as though these animals walked to the slaughter house.

Large suppurating wounds from punctures, gunshots or branding irons, or gangrenous wounds are sufficient cause for rejecting the bearers for food purposes. Such animals are usually in a declining physical condition, which fact makes it highly suspicious, if not certain, that the structures of the body are deleteriously influenced by poisonous elements carried from such wounds. If such wounds be small and post-mortem sections of the surrounding structures and contiguous glands show them to be normal in color and consistence, the removal of a liberal portion of the structure surrounding such wound should render the carcass unobjectionable.

Actinomycosis is the most prevalent disease of cattle in this section of the country, and in at least 80 per cent. of the cases in cattle offered for sale at the market the lesions of the malady are confined to the structures of the head and neck. Indeed, in most cases it is a local affection, in no way affecting the general system, excepting as it interferes with prehension, mastication and deglutition of food. The majority of cases involve the inferior or superior maxillary bones. In all these cases coming under my notice there were found to be from one to six or more fistulous tracts, discharging into the cavity of the mouth. These fistulæ are to be found before the disease has reached sufficient development to be observable by visual examination externally, and long before the overlying skin has been involved in any degree. A careful examination of the internal organs of many cattle having actinomycosis of the maxilla in the early stage but with fistulæ in the mouth has failed to reveal the involvement of any visceral organ. As stated before, the lesions of the disease are to be found usually in the tissues about the head and neck. When the soft structure only are involved it usually begins in one or more of a chain of lymphatic nodes, extending from the mouth to the thorax, most frequently in the sub-maxillary region. The disease processes set up in these nodes, destroy them and in their stead is developed a dense, thick-walled sac of variable size, containing a whitish, odorless fluid or semi-fluid mass, which, it is claimed, "consists of detritis resembling pus but lacking the specific micrococci which are always present in pus." The skin over these tumors may be involved and a fistula established, the external end of which is surrounded by a granular growth, which necroses on the surface, giving off a very offensive odor and has a disgusting appearance. Extension to other parts is more frequent when the disease is glandular in character.

In about 20 per cent. of cases the fungus invades the soft parts about the head and neck, many of these present actinomycotic growths in the lungs and occasionally the liver and intestinal structures are invaded. The disease appears to extend

along the lymphatic channels rather than to find dissemination through the general circulation. Out of several thousand cases only two were reported as generalized, and careful inquiry showed no involvement of the muscular structures but was confined to the head, neck, glandular structures of the cavities, and I question if these cases were not pyæmia coincident with actinomycosis. Actinomycosis of the tongue is very rare.

When the bony tissues, the parts invaded by the actinomyces, the characteristic proliferation of the osseous and periosseous tissues attain dimensions which give it the popular name of "big jaw." The fungus destroys the bone and its covering, supplanting them with a new growth of fibrous tissues, enclosing masses of granular tissue, in which is imbedded small yellowish points of gritty, purulent fluid, the hard grains being clumps of the specific micro-organism of actinomycosis. When the overlying skin is involved, the surface presents one or more granuloma, which surrounds fistulous openings through which a purulent fluid escapes. If these growths have not interfered with the general health of the animal, sentiment is the most tangible reason for condemning the carcass.

Tuberculosis is found in a small per cent. of the cattle slaughtered in the valley of the Missouri, being found principally in cows over five years old, but is occasionally found in calves and young cattle. No structure of the body is entirely exempt from disease processes set up by the tubercle bacillus, but there is a much greater tendency for the germs to establish themselves in the lungs, thoracic glands, and mesenteric glands, and then spread to other contiguous organs or tissues, or becoming generally disseminated throughout the body. The bacilli, by their active presence in a tissue, induce a new growth about them which, if it be near or on the surface, projects or stands out like granules. These growths are called "tubercles." They are found scattered through the substance of glands and other structures, or on their surfaces. This form of development in the serous membranes constitutes what is known as "pearl" disease. Tubercles are often agglomerated into masses from the

size of a pea to an egg, and even attain the weight of ten pounds or more. Tubercles or masses when found on free surfaces have the appearance of granulation tissue, but when cut across the centres are found to consist of semi-solid, whitish, caseous material, and in chronic cases may contain small particles of lime salts, giving this cheese-like substance a gritty feeling to the touch. Sometimes the necrosed tissue in the tuberculous glands of the neck and thorax and in large tubercular masses in the substance of the lungs and liver, may be liquid or partly liquid. It is a very difficult matter to detect the tuberculous animal when confined with others in slaughter house yards, as there are no pathogenomic signs which plainly and certainly distinguish it from the non-tuberculous, unless it be in the cow bearing the tuberculous udder and contiguous lymphatic glands. By tactile examination any considerable development of tubercle in the lymphatic glands above and behind the udder, or in the udder itself may be recognized by the nodular character of the induration present. The non-tubercular induration of this organ giving a more uniformly smooth surface to the touch.

Upon post-mortem examination the observer will readily discover when present the granular appearing tubercular growths on the serous surface covering any viscus, or lining the thoracic or peritoneal cavity. I know of no normal or other pathological condition presenting a similar appearance. These growths are nearly always present either in the thoracic or peritoneal cavity, in cases of generalized tuberculosis. The serous membranes lining the thorax and abdomen are easily torn out and with them these telltale evidences of generalized infection. Enlarged lymphatic glands and abnormalities in appearance of the visceral organs will attract attention, by section of which the character of the disorder may be determined. It is differentiated from actinomycosis by the small yellowish points and the actinomyces grains of the latter disease, and from parasitic and other abscesses by the character of contents, and the presence or absence of like lesions elsewhere, and if necessary by aid of the microscope. In ordinary post-mortem

examinations in slaughtering establishments, the inspector should have time to minutely examine the entire carcass in cases in which the gross lesions are confined to a single organ or gland; even then he cannot always discern whether generalized tuberculosis is in process of development from the localized form. Color, odor, texture, fatness or leanness give no hint of such extension of this disease. I have seen very fat carcasses which were actually studded with tubercles all over the external and internal surfaces, as well as their being profusely interspersed throughout the muscular tissues. Of course many cases are emaciated. Localized tuberculosis whether it be in lymphatic or mammary gland, in lung or liver, does not apparently modify the physical appearance of the carcass.

There seems to be a great diversity of opinion as to the wholesomeness or unwholesomeness of the flesh of tuberculous cattle, even in Europe, where several international congresses have debated the subject at great length. The consensus of opinion seems to be that in all cases of generalized tuberculosis the carcass should be condemned, and when localized the flesh may be safely used for food.

The disease known as "Texas fever" or "Southern fever" may be recognized in the living animal which has been driven to the abattoirs for slaughter, if it is allowed to become quiet, for as soon as the excitement of the drive is past the sick animal assumes a characteristic position. The back is arched, the limbs are spread apart to enable it to stand steadily, the head is dropped low, the ears fall downward and forward, or the animal may lie down, when the head is carried around to the flank, as in parturient apoplexy. If a thermometer be employed, it is usually found that the rectal temperature is 103 degrees to 106 degrees Fahr. Should the animal void urine, the dark wine color will be very noticeable, and when the sick animal is made to walk, after a period of rest, a staggering gait will attract attention. If it be docile an examination of the visible mucus membranes may be made, but in range cattle the prudent inspector will dispense with the information to be so acquired

for animals sick with Texas fever are more excitable and vicious than healthy cattle. The presence of ticks on the escutcheon, thighs, flanks and elsewhere confirm the diagnosis.

When an animal sick with Texas fever is slaughtered, the examiner will find the spleen greatly enlarged, its capsule easily torn, and the substance of the gland quite black and very soft, sometimes partly liquid, so that considerable of the splenic mass will gravitate to either end of the capsule if suspended by the other end. The liver is much enlarged, and changed from a brownish to a mahogany color, also somewhat mottled on cut surfaces due to being irregularly stained with coloring matter from the blood. The gall bladder is distended with a very dark, tarry, viscid bile, in which is suspended a quantity of yellow flakes, which will deposit upon standing. The urine contained in the bladder has a dark red to port wine color, and the kidneys will be found congested. Other visceral organs present no characteristic lesions. In some carcasses the tissues have a yellowish tinge and the fat a bright lemon yellow shade. In other carcasses the color of the flesh is normal but the cancellous structure of the bones is stained dark like the urine.

The foregoing presents the principal ante-mortem symptoms and post-mortem lesions of an acute disease fully developed. In this type of case an inspector would not be in doubt as to whether or not an animal is diseased, nor as to what disease it is, neither would he hesitate concerning its condemnation. In the same bunch of cattle in which this typical case is found, there will probably be others in which this malady is just beginning to develop or is partly developed. The structural changes in the spleen and liver are not so marked, perhaps scarcely discernible. The disintegration of blood corpuscles may not be sufficient to stain the urine highly. Or the case may be of a very mild type. It will tax the judgment of an inspector to rightly determine whether or not the animal is infected; whether or not the disease is sufficiently developed to render the flesh unwholesome, this disease not being communicable to man.

Advanced pregnancy or the parturient state though normal

conditions, should reject the cow for slaughter. Sentiment renders the flesh of such unappetizing, as well as the flesh of the unborn or recently born calf. Local regulations usually require the calf to be four to six weeks old, or to weigh at least seventy-five pounds when dressed.

Extreme emaciation from any cause so modifies the tissues that the carcass does not become firm and dry in the refrigerator, like normal flesh, and accordingly is very deficient in nutritive qualities and should be rejected.

Leucocythemia or lukemia is occasionally found on the slaughter beds. Enlargement of the lymphatic glands and spleen are the abnormalities which attract the attention of the inspector. In the several cases coming under my notice the animals were in thin flesh, presenting the appearance of general unthriftiness. The spleen was many times the normal size, and the lymphatic glands in all parts of the body were from two to ten times the usual diameters, cross section of which presented a normal appearance. In well marked cases condemnation is indicated.

Non-specific inflammation of every viscus is occasionally found and the disposition of the carcass must be determined by the stage of development and extent and character of, perverted functional activity. It is conceded that high bodily temperature, long continued, impairs the quality and character of flesh, rendering it unappetizing, noisome and suspiciously unwholesome.

Acute inflammation, as well as chronic structural changes of the kidneys are quite apt to escape notice, owing to these organs being imbedded in considerable fat. Any considerable interference with the renal functions soon leaves the tissues charged with waste products, which prevent the usual firming of the flesh, it remaining soft and sticky or clammy to the touch and gives out a loathsome urinous odor. Such flesh should be condemned.

Cold abscesses may be found in all parts of the animal carcass but are most frequently found attached to a thoracic or abdominal viscus. There is very rarely more than one in any

individual and they vary greatly in size. They are most frequently found in young, highly developed and rapidly fattened cattle which present every appearance of perfect healthfulness. They consist of a very dense limiting membrane enclosing a whitish, odorless purulent fluid which is rather gruesome to look upon, but innocuous. There is no morbid disturbance in the structures contiguous to such abscesses, and they can be enucleated leaving the carcass wholesome food.

An occasional case of pyæmia or multiple abscesses throughout the body is met with. Investigation usually reveals the source of infection in a suppurating wound or purulent inflammation of the uterus or serous membrane, these are cases of septic infection from a retained fœtus or placenta, or from a gangrenous organ or wound will call for condemnation. The carcass in such cases gives out an offensive odor and does not dry and harden when placed in the cooler.

Genuine jaundice is seldom seen and when found indicates condemnation. A pseudo-jaundice is very abundant and is due to the peculiar coloring of fatty tissues. It will be noticed that the fat of animals which are in a thriving and improving condition is yellowish white, and the fat of those in a retrograding condition is more highly colored, even acquiring a dark orange yellow color, giving the carcass a jaundiced appearance.

Some southern cattle are infested with flukes. These parasites may be sufficiently numerous to channel the liver in all portions and stimulate new growth of tissue elements sufficiently to double or quadruple its normal size, yet the appearance of the carcass is normal and appetizing. The liver alone is rendered objectionable.

The cysticercus bovis is very rarely found in cattle coming from the region west of the Mississippi River. The cysts are usually most numerous in the muscles of the cheek, they are about the size of a navy bean and consist of a cyst wall enclosing a small tapeworm head and a quantity of limpid transparent fluid. The presence of this parasite (one source of tapeworm in man) indicates condemnation.

Sheep which come to the western markets are less subject to disease than cattle and hogs. The most frequent cause for condemnation is emaciation. Some of the sheep from Mexico, New Mexico and Colorado are infested with tapeworms which are so numerous in the small intestines and bile ducts that the nutritive functions are greatly interfered with. There is no fat and little muscle on the carcass, and that little is so devoid of the normal constituents that it remains soft and flabby under the same conditions in which the carcasses of healthy, well nourished animals become dry and firm.

Jaundice is quite common and seems to be dependent upon pathological derangement of the liver, usually inflammation of that organ, but occasionally atrophy or or sclerosis of the hepatic tissues. Some cases of jaundice found in sheep shipped from western ranges are probably cases of ictero-hæmaturia ;. the spleen is large, the liver is black and friable, the bladder full of high colored urine, the skin and other tissues stained intensely yellow. Condemnation is indicated in these cases.

A disease somewhat resembling tuberculosis is found in sheep grazed on the plains of Colorado and Utah. It is characterized by the development of caseous masses in the lungs and thoracic glands, the glandular masses often becoming two or three inches in diameter and even greater. I do not remember to have seen the extension of this disease to any tissues or organs outside the thoracic cavity. The disease is essentially chronic and apparently does not interfere with the thriftiness of the animal until large areas of the lungs and numerous glands are invaded and destroyed. When the health of the animal has been impaired by this disease it would seem self-evident that the carcass should not be used as food. In all cases the organs invaded should be destroyed.

Another disease somewhat resembling tuberculosis is found in the walls of the intestines and in the mesenteric glands. It consists of nodules of various sizes made up of adventitious tissue enclosing caseous pus, and sometimes there is found in addition small round worms, the *Hyposto mum Columbiana*. This is

known as the nodular disease, and its only apparent effect is the rendering of the intestines valueless as sausage casings. In all wounds, abscess, septic conditions, advanced pregnancy, etc., the same rules for condemnation apply as in cattle.

Many sheep are the bearers of the cystic *tænia marginata*, (bladder worms) which are mostly found attached to the folds of the peritoneum; as they are harmless to man the carcass is wholesome food, but butchers should be required to remove all cysts and put them into the furnace or retort (in order that they may not be thrown to dogs, in whose intestines they become mature tapeworms).

A few cases of scab have come under my notice, in which inflammatory processes extended beneath the skin. The animals were anæmic and apparently subjects of septic poison. These cases were condemned.

Swine are subject to bruise and fracture during transportation, also to many diseases identical with those of cattle, and the same principles apply to determining the wholesomeness of the flesh for food. There are some special diseases of swine of which hog cholera and swine plague are the most important. These two diseases are frequently associated in the same animal.

It is the common custom of stock owners to ship their herds to market when contagious diseases develop in them, regardless of their fitness or fatness and sell them for what they will bring, in order to avoid a greater financial loss. More especially is this the case when the animals are swine affected with cholera. In the stage of invasion or in mild cases none of the physical signs are sufficiently marked to indicate the diseased hog when driven into the slaughtering pen, but in the more advanced stages of ordinary virulence, the sick hog lags behind, has a staggering gait, may cough violently, and is so exhausted by a short drive that a spasmodic action of the diaphragm (commonly called thumps) is present in many cases. When allowed to stop the snout is dropped to the ground, the back arched, the abdomen tucked up, and vomiting, purging or both occur if the animal has access to water, which follows its endeavor to quench an insatiable thirst.

Red discolorations of the skin are usually present in various parts, the ears are frequently swollen to twice or three times the normal size and thickness and occasional necroses of the skin and subcutaneous tissues occur upon the ears and other parts which have been bruised. When slaughtered, and the hair and cuticular layer of the skin are removed in the usual process of preparing the carcass for food, the hæmorrhagic discolorations of the skin which are present in nearly all cases of cholera will attract the inspector's notice. These discolorations vary from a bright red color in recent cases to a dark gray pigmentation in convalescing cases. They may vary in size from small lenticular spots on the legs, jowl and neck, to blotches several inches in diameter situated on any part of the body.

Strokes of the whip or other light contusions of the skin will produce light red marks in healthy hogs, but in cases of cholera the color is dark red and extends a considerable distance from the injury.

Hæmorrhages also occur into the subcutaneous fat from very slight contusions and show as dark spots under the skin. In cases of several days' standing these hæmorrhagic areas often necrose, and an incision through the skin reveals a quantity of dirty brown putrid fluid. The overlying skin will slough if the animal lives long enough. The lymphatic glands in all parts of the body present hæmorrhagic lesions, which vary from redness of the periphera to a dark bloody discoloration of the entire glandular mass. Extravasations of blood beneath the serous membranes are often quite extensive, especially in the lungs, mesenteric folds and leaf lard. In mild cases the kidneys are studded with minute points of coagulated blood, and in violent cases the pelvis and capsules may contain extensive clots of blood. The characteristic exudation nodes (buttons of Welch) and ulcerations of the intestinal mucus membrane are rarely difficult to find, especially in the region of the ilio-cæcal valve and may be confidently looked for to confirm a doubtful diagnosis. The hæmorrhagic lesions of the skin, lymphatic glands and serous membranes are usually sufficiently marked to render

a diagnosis certain, but these lesions are sometimes very slight, and an examination of the intestinal tract may be necessary to determine whether an incipient pneumonia or false membrane present, in a given animal, is due to cholera or swine plague, or other causes. The hæmorrhagic lesions are often not conspicuous and may be readily overlooked when hogs are being slaughtered at the rate of 200 to 500 per hour. Swine plague is usually manifested by a congested condition of the skin covering a large area, either one-half or two-thirds of the entire carcass, giving it the appearance of a deep red blush. The internal lesions are most pronounced in the lungs, being a form of pneumonia in which yellowish points are discerned, these points being necrotic spots or centres. The serous surfaces of the lungs as well as all other serous surfaces may be covered with a fibrinous exudate either in a thin layer or in many layers, and when the abdominal viscera is the region more generally involved, all of the viscera are agglutinated together. This condition ought readily to be discriminated from simple peritonitis, pleuritis or pericarditis, by involvement of the serous surfaces in other parts of the body and by the characteristic appearance of the lungs and skin. A diagnosis of hog cholera or swine plague should always mean condemnation of carcass and viscera.

Swine infested with cysticercus cellulosæ are found occasionally. In the few cases I have seen, cysticerci were present in great number, pervading all the voluntary muscular structures and the heart. When found elsewhere the cysts were imperfectly developed. They appear as little sacs of water about one-fourth of an inch in diameter, lying upon and wedged between the muscular fibres. Each sac contains a white mass about the size of a millet seed (a tapeworm head) which projects inward from the cyst wall. Flesh containing these cysts is commonly denominated measly pork and is the source of tapeworm (*tania solum*) in man. Of course the flesh would be rendered harmless if thoroughly cooked, but would remain disgusting, and should be condemned.

The cystic form of the echinococcus veterinorum is very common in swine and the hydatids are found almost exclusively in the liver. While the authors have reported the finding of this cystic parasite in all parts of the body of both man and animals, medical and veterinary records do not show such a widespread diffusion in this section of country. The cysts vary in size from ¼ to 2 or 3 inches in diameter and consist of a translucent double wall enclosing its full capacity of transparent liquid. The inner wall (mother membrane) is easily separated from the outer wall, and if divided it persistently rolls upon itself when effort is made to spread it flat upon a surface. The inner surface of this wall or membrane usually bears many minute whitish bodies, only observable upon close examination. These bodies are made up of from 10 to 20 tapeworm heads, which are plainly visible upon 50 to 100 diameter magnification. The cyst and contents are modified by degenerate processes and may be converted into abscesses. They are found on the surface or embedded in the substance of the liver and vary in number from one to many. Infested organs should be rendered unusable as food for man and beast.

The report of the Department of Agriculture states that three and one-twentieth per cent. of all hogs examined microscopically by the department during the fiscal year ending June 30, 1893, were infested with trichinæ. As the number examined exceeded one and one-half millions, it is evident that this parasite is wide-spread and very prevalent. Trichinæ produce no gross lesions in the infested animal, and are detected only by aid of the microscope. They are found almost exclusively in the muscular structures, and are most numerous in the tongue, diaphragm and psoæ muscles, but are confined to no section of the carcass. They are readily detected when magnified thirty to sixty diameters, and specimens of muscle, either fresh or cured, are easily prepared for examination, either by mincing or cutting it into small pieces and spreading between glass slips thin enough to permit light to pass through. The trichinæ are usually found coiled like spiral springs and are enclosed in sacs of

transparent fluid, usually one in a cyst, but sometimes two or three and even five or six. The cyst and contents including the worm are subject to both fatty and calcareous degeneration; in the latter form of degeneration the trichinæ are often black and fragile, being frequently broken into fragments in the preparation for examination. Trichinized flesh does not differ from the non-infested flesh in appearance and is harmful as food only when eaten uncooked. The communities and nations which eat their pork raw naturally require the inspection and condemnation of trichinized pork.

This presentation in short review of the gross diagnostic lesions of diseases and conditions of food animals, and comments as to the disposition of the flesh is all too brief, but may serve to open the discussion. Diseases and conditions which have not come under the writer's personal observation have been purposely omitted.

IMPORTANCE OF COUGH IN A CLINICAL SENSE.

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Physiological Considerations.—By cough is understood a sudden reflectory act depending on the irritation of the cough centre in the medulla oblongata. Cough is one of the most important factors in *physiological expectoration*, being an involuntary act in the horse. Cough therefore is a symptom, the result of a stimulation of its centre in the medulla, which may be of central or peripheral origin. Any stimulation of the cough centre calls forth a centrifugal stimulation of the *inferior laryngeal nerve*—the motor nerve of the larynx—and a clonic spasm of the glottis results; at the same time centrifugal stimulation of the motor nerves of the auxiliary muscles of respiration follows. This results in a sudden high tension of the column of air below the glottis, which overcomes the muscular opposition of the laryngeal muscles and that peculiar act—termed cough—bursts forth.

Of primary importance in the production of cough is the *vagus*, as it supplies with sensation the pleura and the mucous membrane of the trachea and parts below; the *superior laryngeal nerves* also come into consideration, as they constitute the sensory apparatus of the laryngeal mucosa. Cough due to central irritation is rare. The same refers to cough finding its origin in irritative processes located in the ovaries, uterus, bladder, stomach, external auditory meatus and nasal cavity.

The quality of cough varies very much in the domestic animals; this depends on the anatomical arrangement of the vocal cords, the pharyngeal and buccal cavities and sinuses of the head. Thus the cough of the horse is sonorous and short, while the ox produces a weaker and dull sound.

Classification of Coughs.—

1. From an anatomical point of view: Open glottis cough; closed glottis cough.

2. From a regional point of view: Laryngeal cough. Tracheal cough. Thoracic cough; (*a*) bronchial, (*b*) pulmonary.

3. As to its course: Acute cough, chronic cough.

4. As to its origin: Spontaneous cough, artificial cough.

5. As to its properties: Long or short; strong or weak; painful or painless; dry, tight, or moist and loose, frequent or occasional, hollow, barking, wheezing, paroxysmal, strangling, evasive and suppressed.

The irritating agent may be introduced from without, such as dust, smoke, gases, medicines improperly administered, etc.; or the agent may arise within, as inflammatory products from the lungs or bronchi, which, on reaching a sensitive mucous membrane, as that of the larynx, for instance, stimulate the cough centre. The laryngeal mucous membrane requires but little irritation to produce cough when either acutely or chronically diseased. Quick movements, as getting up, turning the head suddenly, drinking water, especially when cold, cause coughing.

From a clinical standpoint cough is of value as it helps to determine the region, the extent, the intensity and frequently

the duration of the disease producing the reflex act. Of course I do not wish to convey the idea that cough will lead to a positive diagnosis as to the seat of the trouble in every instance. Nevertheless, the artificially produced cough or the spontaneous cough is often diagnostic to the experienced ear and may under certain conditions be a decisive factor. I need only remind of the short, weak, painful and evasive cough of an acute pleurisy. Friedberger and Fröhner say that a definite disease cannot be diagnosed by the quality of the cough only. The trained ear of the American practitioner at the same time quickly recognizes by the character of the cough a laryngitis, pneumonia or pleurisy or even a bronchitis not to be detected by auscultation. Therefore, the diagnostic importance of cough cannot be overestimated.

Cough indicates a diseased state of some portion of the respiratory tract; its quality being distinctly shaped as to the seat of the irritative process. Consequently both artificial and spontaneous coughs are fundamental guides in the diagnosis of diseases of the respiratory apparatus. When an animal is coughed by slight pressure upon the trachea or larynx, it is apparent that the part or parts compressed are hyperasthetic, while the nature of the cough thus induced reveals the region if not the seat and often the stage and intensity of the morbid process.

When spontaneous cough is present and slight pressure upon the larynx or trachea yields negative results, it is reasonable to presume that the source of the cough lies below the point compressed during the examination. At the same time cough resulting from compression of the larynx or trachea as practiced to produce artificial cough does not necessarily indicate exclusive disease of the laryngeal or tracheal mucous membranes, as the mucous membranes of the bronchi may also be involved. In such a case the nature of the cough would be a valuable guide. Lymphatic animals and those with a short neck are often difficult to cough.

In acute and chronic diseases of the mucosæ of the respiratory tract of a superficial type are always accompanied with

cough; but when the irritability of the sensory nerves is destroyed as by infiltration of the submucosa, cough of necessity is absent. The impossibility to produce cough when the sensorium is depressed is always a bad omen. The forcible expiration, that is cough, is followed by a more or less rapid entrance of air into the air-passages. This gives rise to a slightly wheezing inspiratory sound, especially marked in angina laryngea and confirmed roarers. In the earliest stages of a laryngitis acuta this wheezing inspiratory sound is often the only diagnostic symptom, barring a slight rise of temperature.

Animals have no motive to cough and for this reason cough must be a valuable agent from a diagnostic standpoint. But we must remember that cough is under the influence of the will of the animal to a certain extent. We often see the horse make desperate attempts to modify the intensity of the cough. He will stretch the neck, move the lips as if mumbling, shake the head, paw and finally an evasive cough makes its appearance.

Of the various mucous membranes which when irritated would cause the animal to cough, the one of the larynx ranks foremost next that of the bronchi and finally that of the trachea, while the alveolar parenchyma has no nerves which might induce cough. The mucosa of the trachea will permit, when in a normal state and when diseased, a great deal of insult before cough is produced. For instance, swabbing it during an arytenectomy gives negative results with regard to cough. Artificial cough produced by pressing with the fingers upon the region of the arytenoids or superior extremity of the trachea will as a rule cause the animal to cough from one to four times in succession. To induce the animal to cough quite some compression is required, while cough following slight pressure upon these parts is suggestive of an irritative state.

Of the many acute and chronic diseases of the respiratory tract accompanied by cough, the following are of special interest from a clinical standpoint:

1. Pharyngo-laryngeal lesions.
2. Acute and chronic laryngitis.

3. Acute and chronic bronchitis.
4. Pneumonia.
5. Pleurisy.

1.—*Pharyngo-laryngeal lesions*, produced, for instance, by the irritative process accompanying eruption of the sixth molar or the presence of a foreign body, such as the larva of the œstrus equi, once observed by the writer, is accompanied by a cough closely resembling a purely laryngeal cough. In the latter instance the animal coughed frequently in a distressing manner and was very sensitive on pressure over the region of the arytenoids. The larva was situated close to the base of the epiglottis.

2.—*Acute laryngitis* gives rise to a frequent, distressing spasmodic cough, each cough being followed by a wheezing inspiratory sound. Depending on the stage of the phlegmasia the cough may be strong, short, painful, hollow, wheezing or strangling. The animal is easily coughed on pressure, stretching the neck while doing so. This peculiar cough, either coughed with an open or closed glottis, with its subsequent wheezing inspiration, the peculiar stretched state of the head and neck, the anxious expression of the eyes and the attempts to modify or suppress the cough are absolutely characteristic.

Chronic laryngitis is accompanied by an occasional, open glottis cough, short, tight, somewhat barking in character. This cough manifests itself especially when the animal leaves a warm stable and reaches a cold atmosphere; further, when going beyond a certain speed, cough is apt to appear. In this disease the tendency to cough is greater at one time than at another. Slight pressure, especially when exerted upon the posterior portion of the larynx—the pars respiratoria—is productive of cough.

3. *Acute bronchitis.*—Depending on the extent and intensity of the diseased area, the cough is often short and sharp, or when severe, exceedingly painful, short, evasive, tight. In such a case there are regular paroxysms distressing to witness, the animal coughing with a partially closed glottis.

Chronic bronchitis.—The cough of chronic bronchitis as a matter of scientific interest may be subdivided into that of (1) Tracheo-bronchitis. (2) Chronic catarrh and ectasia of the middle sized and small bronchioles. (3) Chronic capillary bronchitis.

The cough of 1 is distressing, usually paroxysmal, a strong rough cough, a full volume of air being expelled.

The cough of 2 is usually short, moist and interrupted; in old animals weak. Such animals are most apt to cough while moving along, especially when first starting out. Then again they may be most likely to cough when in the stable in the early morning hours. One peculiarity of this cough lies in the fact that it increases as more roughage is fed.

The cough of 3 is mostly sharp, short and low, often abortive.

The coughs described under 2 and 3 are the ones usually met with in the heavy horse, the cough of which may be truly called an abortive one, as all preparations are made to give vent to a full cough, aborted by the existing pathological lesions.

4. *Pneumonia.*—The cough is sharp, deep, evasive and short; the animal coughing a number of times in succession, followed by a pause free from coughing.

5. *Pleurisy.*—The cough of pleurisy is short, painful, weak and evasive. The animal tries to modify the cough which, when brought forth, resembles more a groan than anything else. This evasive, of necessity weak cough is suppressed to a certain extent by the will of the animal in order to avoid succussion, which would follow free coughing. The fixed state of the ribs when coughing is quite peculiar to pain in or near the thoracic walls. The latter is seen in the cough *of pleurodynia*, which resembles that of pleurisy closely; here the almost normal state of the pulse and absence of fever settle the question.

In conclusion, I repeat that cough in itself is not always sufficient to make a conscientious diagnosis; for instance, in *pulmonary œdema* but little cough is present; the same refers to

emphysema; this is easily explained by the fact that those parts are not endowed with nerves capable of producing the reflex act-cough. The cough therefore of the heavy horse does not depend on the lung lesions as far as the alveolar parenchyma is concerned, but is due to the *chronic bronchitis* and its sequelæ which almost invariably accompany it. Thus again the cough of a *hypostatic pneumonia* or a cough of *deglutition pneumonia* cannot be differentiated. Thus an *acute bronchiolitis* and *pneumonia* give rise of necessity to a very similar cough, while the cough of a *gangrenous pneumonia* is characterized by its disagreeable, sweetish, nauseating odor.

Altogether cough from a clinical standpoint is of enormous value to the equine practitioner, the chances of auscultation and certainly those of percussion being so limited. Many a slight *pneumonia*, *pleurisy*, *bronchitis*, *laryngeal angina* would remain a clinical guess were it not for either artificial or spontaneous cough, at least regional in character.

THE SCIENCE VERSUS THE ART OF VETERINARY SURGERY.

By Robert W. Ellis, D.V.S., New York City.

A Paper read before the Eighth Annual Meeting of the New York State Veterinary Medical Society, Sept. 14, 15, 1898.

Essay writing is not my strong point, so upon being requested to present something at this meeting I have jotted down a few thoughts as they have presented themselves to me, under the imposing title of "The Science versus the Art of Veterinary Surgery."

In looking over the field of surgery with its advances in the various operations for the alleviation of pathological conditions, as well as for other advantages to be derived from them, the question has presented itself to me, is the art of surgery keeping abreast with the science in general practice? And in looking about me for an answer to the question, my observations have all led me to believe that it is not. Among the advances we

note the introduction of new operations for the alleviation of pathological conditions which were incurable previous to their introduction; as for roaring, due to "laryngeal hemiplegia," "arytenectomy," and the still more recent "arytenoideraphy" for the alleviation of the same condition. And for "chronic tendonitis," "periostosis of the fetlock" and like conditions that resist firing, blistering and other modes of treatment, there is relief to be obtained by "mesoneurectomy," "median neurotomy." And, besides the new operations that are continually being presented, there are new and advanced methods of performing old operations made possible by strict "asepsis."

One circumstance which leads me to this unwilling conclusion is, that there are comparatively few men in general practice who ever attempt any of the classic operations, and not a few who evade the more ordinary ones, even if their results by other modes of treatment are not so beneficial. Yet, I have heard some of those same men earnestly proclaiming to some interested listener the great strides that have been made in veterinary surgery and telling of the different new operations now in vogue, in a manner sufficiently convincing that they were not at all behind in the literature of the day on those subjects, although entirely wanting in the application of the methods they were describing, having never performed them themselves, but contentedly basking in the reflection of the glory of those members of the profession that had. Such content, gentlemen, and the feeling that "such operations are all right for Prof. So and So, but are too much for me," is the secret to a great extent of the art of surgery not keeping abreast with the science in general practice. And should each one of us ask ourselves the question, "Am I up to my ideal veterinary operator or am I on my way to getting up to my ideal?" Or, on the other hand, "Am I not possibly behind some of the bold, though perhaps less 'scientific operators' of a decade ago?" Which of the two questions, gentlemen, would many of us have to answer in the affirmative? I fear, the latter.

Now, the next question that would naturally present itself is, why is this so?

I think to some extent (but to how great an extent I am not prepared to say) to lack of inclination or adaptability to that particular branch of practice, which soon results in the feeling of "content" before alluded to. But I believe another and perhaps the principal reason is the lack of a sufficient number of the variety of cases in general practice to attain proficiency in some of the more delicate and "classical" operations. Another reason is that every veterinarian is not fortunate enough in the beginning to have facilities, such as suitable places to operate, etc., or he, at least, feels that he has not, coming as he does just fresh from college, where he has been accustomed to seeing operations performed in spacious operating rooms with all the necessary appointments, and he is very apt to send the case to some one that has, expecting to be better prepared later on. If he is in the vicinity of a veterinary college, he sends the patient there, and thus it is that you will observe "house surgeons" in college hospitals almost invariably become good operators by being constantly brought in contact with that kind of work. In other words, a "fellow-graduate" of the house surgeon goes out to build up a practice just as well prepared for his work as the house surgeon, but finally when he meets a case that requires some "special operation" he reflects that "he has not the facilities yet to handle that case," and so sends it to the "college hospital." That is an operation lost to him and gained by the "house surgeon," and in that way, he runs back while his classmate goes ahead. In other words, the "art of surgery" with him has not kept abreast with the science, for during all his spare moments he has been reading the current literature of the day, possibly has bought a new book or two on surgery, and has learned with much interest of one or two new operations that have come into veterinary surgery since he has graduated, all of which have undoubtedly been performed at the veterinary schools since that time also. These remarks, gentlemen, remember,

apply principally to "classical operations" of the nature of those mentioned in the beginning of my paper, although many of the operations performed by some of us in our every-day work, such as "neurotomy," both "median" and "plantar," bitch "spaying," "castration of the male," to say nothing of the more common operations of "firing," etc., are entirely evaded by some. Assuming, then, that I am right in stating that the "art of surgery" does not keep abreast with the "science" in general practice, you will admit that this is not as it should be; that point being admitted, a remedy of the condition is perhaps not out of place for consideration in this paper.

In reference to the first class of practitioners mentioned, viz.:—those entirely disinclined, and consequently unsuited for that particular branch of practice, nothing is to be said, as they have a perfect right to leave that branch for those so inclined if they wish to do so, but for practitioners in general, operating more or less in minor surgery, but who have never attempted the more intricate, and, perhaps, we might add, more recent operations, I believe, that a realization on their part that the principles of surgery are the same, no matter in what class the operation may rank, and that in the higher class operations simply an application of the same rules and principles is required, as in more simple ones (except that perhaps more care and skill is required in their application) will tend strongly toward removing the imaginary gulf between the two classes.

So that to prepare for a new and perhaps difficult operation is simply to make a careful review of the regional anatomy, study the steps of the operation carefully from the literature on it, get the details as to what instruments, etc., are required for the particular operation in question, and then proceed, carefully yet boldly and confidently, knowing that you have the details all in your mind and feeling that as a surgeon you are capable of carrying them out; and, as a rule, success will crown your efforts. Again, for those who do not feel disposed to undergo the mental strain of performing a delicate operation

for the first time upon a valuable animal, belonging, perhaps, to a valuable client, but who would prefer entering upon it with that ease and confidence born of familiarity, veterinary surgery offers us the advantage of being able to procure a valueless subject for experimentation, and in the more delicate operations, especially if a man has never performed any in that class, I think this plan advisable, for, although he would probably perform the operation all right the first time if he had given the proper amount of attention to the details of it, regional anatomy, etc., by way of preparation, he would certainly perform it better, or, perhaps, I should say, easier, the second time. The presence in these experimental operations of a practitioner familiar with it, will materially aid in getting the details readily. The extended day sessions of our National Association renders it possible to have practical operative surgery as part of the programme, which is, of course, incompatible with the short evening sessions of our local associations, meeting monthly, quarterly, etc., to say nothing of the indisposition of the members to entering into such a programme after their routine of work all day. They more naturally, after their dinner, prefer sitting in a comfortable meeting room and listening to a paper or discussion on some interesting subject by fellow members or themselves entertaining by the same means.

And at these meetings, if occasional papers were read by members describing their particular *modus operandi* in certain operations performed by them, they would, with the discussions that would naturally follow, prove extremely interesting and instructive, and tend to improve our methods of operating by a healthy exchange of ideas (you are all familiar with the evils of in-and-in breeding) for while we are cognizant of the benefits to be derived from scientific intercourse, which we all concede tends to advance us, we must see to it that we advance symmetrically; for, like growing plants, we must have a tendency to lean toward the side upon which the sun shines most, and I feel certain that papers on "operative surgery" are painfully in the minority; at least in our local association meetings. I am sure

that there are not a few of us who would at least like to become more familiar with such operations as "arytenoideraphy," "arytenectomy," "median neurotomy," "castration of cryptorchids," "caponizing," "amputation of the penis," "extirpation of the clitoris," and "ovariotomy" in mares afflicted with "nymphomania," and perhaps many others which I could mention were you not all familiar with them; and papers of that order would, I think, act as a stimulus for us to perform more of the higher class operations either therapeutically or experimentally, and thereby tend to advance the "Art of Surgery" equally with the "Science" in general practice. To sum up, then, I have arrived at the following conclusions:

1st. That the "Art of Surgery" has not kept pace with the "Science" in general practice.

2d. That such is the case through a failure on the part of practitioners to realize that the principles of surgery are the same in all classes of operations.

3d. That said principles can be applied in operations of any class, by graduates in veterinary surgery, by a careful study of the details pertaining to each particular operation.

4th. That every practitioner owes it, as a duty to himself and his clients, to keep himself up-to-date in the "Art of Surgery" just as much as in the use of new drugs for the relief of pathological conditions, so that he may be prepared at any time to perform any operation that may present itself to him.

5th. That there are comparatively few papers pertaining to operative surgery presented at our association meetings, and,

6th. That an increase in such papers would produce an increase of interest and a desire to perform many operations previously considered beyond us as a result, and the problem of how to advance the "Art of Surgery" with the science thereby solved.

Now, gentlemen, while I realize that my paper has not done justice to its title and that I have, at best, made but a superficial survey of the subject which I have attempted to cover, I hope that it will at least suffice to elicit the valuable opinions of some of my colleagues present that we may all profit by them.

GLANDERS AND ITS MORTALITY.

By James Law, M. R. C. V. S., Ithaca, N. Y.

A Paper read before the New York State Veterinary Medicine Society, Sept. 14–15, 1898.

At the Buffalo meeting of this society I rather shocked some members by saying that recoveries from glanders were not uncommon in America, and that when we reached the clear dry air of the Plains and Rocky Mountains, and under a continuous outdoor life, recovery might rather be said to be the rule than the exception. One member was so astounded at such a statement that he expressed the hope that it should not be allowed to get into print.

Last November a somewhat similar reception was given to the same statement from Nocard, in Moscow, and when by mistranslation in the English journals he was made to claim cures instead of recoveries, the outcry was not a little amusing.

But in these days of bacteriological demonstrations and of mallein and tuberculin tests, preconceived ideas are made to give way and long cherished doctrines have to be set aside. The acceptance of the new truth does not always make our course the easier nor the more pleasant, though it does give the comforting conviction that our knowledge is founded on a sounder and more substantial basis. It is not pleasant to have an important and influential layman, interested in one's sanitary work, and anxious to support it, say of one of the familiar animal plagues (glanders, tuberculosis, lung plague), "but the animal never recovers." Anxious as he is to give your work an unassailable ground, his question virtually implies that if there is a chance of recovery, the slaughter for sanitary reasons is a questionable procedure. One feels himself at a disadvantage in having to enter on an explanation of the economic and moral reasons for making a speedy end of an infection-factory, on the simple ground of the advantage to others. But when truth is involved we must not hesitate to hold that supreme, and when we must carry out unpalatable work, we must place it on a foundation which will stand the rays of the sun.

If we go back to the early days of the century we find that European veterinarians acknowledged that glanders was not necessarily fatal, for chronic skin glanders (farcy) was habitually treated and many cases appeared to recover. The fatality was inevitable only, it was believed, in the case of implication of internal organs, including in these the nasal mucosa. In addition to this Percivall, Sewell, Vines, Turner and Morton recorded cases of recovery from chronic glanders of the nasal mucosa itself. But with the rank and file of the profession, the inevitable fatality of glanders has remained a firm conviction to the present time.

The only experience in America, in the hot, dry season of 1868, soon convinced me that I had to deal with conditions with which I had been hitherto unacquainted. In my inland town, there was a remarkable absence of coughs and colds, and especially of abundant catarrhal expectoration. Tuberculosis and scrofula were common, but the copious sputa of western Europe was very little in evidence. The morbid secretions were largely suppressed. Wounds healed more readily and I confidently undertook operations before which I would have hesitated in the Old World.

Soon I was called to see a case of advanced nasal glanders in an aged horse, which presented all the characteristic symptoms and when killed the post-mortem lesions of the disease. A young black team standing beside this horse showed the glanders congestion and ulcers on a more limited scale, with the significant, small, nodular, insensible submaxillary swellings. I counselled their destruction, but the owner, who was very proud of them, begged to have them treated. They were put on strychnia arsenite, sodium hyposulphite and sulphurous inhalations, with good hygiene. Slowly the ulcers healed, the submaxillary swellings disappeared, and, though both horses were kept for twenty years in a stable with a dozen others, no further case of glanders developed. I need not say that disinfection had been carefully attended to.

A second experience was had on a farm with five horses,

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which could be kept well apart from others. Four were affected with skin and intermuscular glanders, including several very large abscesses with glairy contents. Here again the owner could not reconcile himself to the killing of the animals, and they were subjected to a lengthy and, finally successful treatment. For a number of years they have been to all appearances well.

Another case was the horse of a lady physician which was accustomed to use the same manger as did the horses of the brother-in-law, several of which were killed as cases of confirmed glanders. This case had but one small nasal ulcer visible and slight nodular enlargment of a submaxillary lymph gland. It was strictly secluded with the intention of having it destroyed, but a week later I could find neither ulcer nor glandular swelling; the horse had apparently recovered and remained so. As serving to further identify the disease, it may be stated that one of the group of condemned horses was smuggled off into another county, where I found and killed him months afterwards suffering from unequivocal chronic glanders.

My most interesting experience, however, was on a large horse-breeding ranch on the elevated plains of Wyoming. This stud had been for years losing horses from a disease which the territorial veterinarian found it difficult to diagnose. It showed the symptoms of glanders, but so large a proportion recovered that he was not prepared to discard his cherished education and belief and call it by that name. A short time before my visit one of the cowboys died of a disease which was variously diagnosed as black smallpox, malignant measles, and rothelu, but which from the symptoms was undoubtedly acute cutaneous glanders.

On this ranch I examined 200 horses coralled because of suspicion, and found over 50 head suffering from unmistakable glanders. Several mules had just died and the lesions found in nose and lungs were of the most pronounced and aggravated character. I still preserve specimens obtained from these animals showing the most characteristic and advanced lesions.

It is noteworthy that I passed as without symptoms of glanders, horses that the territorial veterinarian had condemned about ten days before, and he, in turn, a fortnight later, failed to find any lesions of glanders in a number that I had condemned. During my visit I daily rode behind a powerful buckskin gelding, which the owner assured me had been a pronounced case in the preceding year. I could recognize no evidence of lesion in the nose, the submaxillary glands, the skin nor the lungs. He had to all appearances made a complete recovery.

This all happened before the days of the mallein test. Since the introduction of the mallein test it has become possible to identify glanders in slight and occult cases which would formerly have passed undetected. It has also become possible to attest actual recoveries, by the persistent lack of response to the mallein test which had at first produced strong reaction. The recognition of recoveries, even in Europe, has accordingly become more frequent. The most noticeable papers on the subject have been those of Prieur and Nocard. Prieur as the result of observations on man and horse notes the frequent recovery from skin glanders in man and horse, and the recovery of the horse from even lung glanders in certain cases.

Nocard gives the results of observations on three large studs and on horses from different regiments.

At the remount depot of Montoire the whole stud was tested and a considerable number reacted which showed no visible sign of glanders. Eleven of the horses that had failed to react were killed and all showed miliary glanders nodules in the lungs, which, however, showed no inflammatory areole. These Nocard held to be recovered cases. Out of 233 horses tested 136 reacted, and of these latter 78, after remaining picketed in the open air for five to six months, and after repeated failure to react, were sent into regiments and for five years have shown no sign of glanders.

In a depot of the Paris Tramways Co., out of 160 horses 29 reacted, three only showing the usual clinical symptoms. These and 12 others were killed and all showed pulmonary nodules.

Of the remaining 14, which were carefully secluded, 11 failed to react after a month, and were returned to hard work; they remained sound and again failed to react when tested after 10 months more.

The General Carriage Co., of Paris, had 10,230 horses tested, 2037 of which reacted, and of these 687 showed later the clinical symptoms of glanders. Of the remainder, 338 ceased to react to mallein and were returned to the depots and to work. A large proportion of these have been since cast on account of age and accidents, and the necropsy in every case revealed old pulmonary lesions, which had become fibrous or calcified, and from which no cultures could be obtained.

In the Russian cavalry at Charkoff 658 were tested with mallein, of which 368 reacted. These were isolated and watched for several months, and again and again tested with mallein, with the result that the great majority ceased to react, were returned to the regiment and showed no further sign of glanders.

These cases show that the milder forms of glanders, even in Western Europe, where the disease is more redoubtable than in our dry inland States, do actually recover, and it opens the question in all such cases whether it will be more profitable to destroy them at once, or to seclude them under proper care and hygiene, until the favorable cases shall recover.

The same question arises in the case of tuberculosis in cattle. Many react to tuberculin which are only slightly affected and which, under favorable conditions, would be likely to recover. The question arises whether it is possible in the individual case to secure perfect segregation under favorable hygienic conditions and wait for recoveries; and the further question as to whether it will be profitable even if feasible. In both cases alike the question is primarily one of sanitation, and secondarily one of economics. 1st, can the preservation be made with perfect safety to others? and, 2d, after safety can be assured, will the undertaking be a sound one financially or will it be a losing concern? The answers must be based on the varying circumstances of each particular case.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

"LEECHES," "HOOF ROT," "FOOT ROT," HOOF DISEASE, ETC.

By GERALD E. GRIFFIN, D.V.S., Fifth Cavalry, U. S. Army.

I don't hail from Florida, and particularly not that portion of it adjacent to Tampa, for which, O Lord, I thank thee; but I spent the summer there at the Government's expense and much against my inclination, for Tampa is not an ideal summer resort nor will it ever be, until Hades becomes congealed superiorly. In and around Tampa, and, I am informed, all over the peninsula, it is frequently irrigated by the clouds during the summer months (rainy season, in fact), but it doesn't rain —Jupiter Pluvius just knocks out the sea valves from the embanked nimbus and it simply floods the earth. The altitude of Tampa is not great—one foot and a few inches, more or less. The rain floods collect in the depressions in the palmetto swamps, and, lo! in a few minutes you have a lake where once you had a promenade. The government teamster takes advantage of these lakes and the unsuspecting army mule is led down there to partake of the waters at stated and occasionally irregular intervals. This plan saves the teamster from journeying to the designated water-trough, and at the same time the mule has the advantage of absorbing the tropical organic matter in the water—a kind of soup, as it were, and then the drink is not so cold as at the trough, the sun having gotten in his fine work on it; moreover, the mule doesn't have to walk so far, and, then, the mud cools off his heels, and the teamster believes in letting them keep cool, too. While all this was going on under my august observation, discretion kept me silent, being only the regimental horse doctor, supposed to be deaf, dumb and blind. We (the mules and I) were approached by the *genus homo* of the country (the aborigine, I believe is the word), known vulgarly as the "Cracker," a poor devil addicted to the use of quinine sulphate in large doses, followed at intervals of two days by Fakeman's liver pills, swamp root, chill tonic, and whiskey. Between doses he has them so bad that he shakes like a canine defecating an undigested osteological collection, and refers to his liver, which we were led to believe was, in the Florida "Cracker," situated in his lower abdominal region. He

warned us of "leeches" and their destructive qualities, and expatiated on their properties and habits. Well, as Mark Twain or some other fellow once remarked, "Where ignorance is bliss," etc., etc. We simply smiled at his "gag," and, although he appeared at varying intervals of time and at numerous places and tried to give it to us "dead straight," we always gave him the "deadly gleam." There came a day, however, when the wagon master reported several cases of "rope burn" and "cracked heels" in the train from the animals getting over halters, etc. He was given the same old "dope" to be applied A. M. and P. M., but its efficacy had fled, its magic had vanished, and when he of the wagon train came once more to say he had several more cases, and that the old ones were getting worse, we investigated, and, in the language of the classics, discovered that we were "up against it."

Here's a typical case: Monday night, O. K.; worked all day and ate. Tuesday morning, "off feed," very lame in hind or fore foot; puts only point of toe on ground; fetlock evidently inflamed, hot and sensitive to touch; looks like rope burn, but no abrasion. Wednesday, still "off feed," numerous small points or vesicles observed around the fetlock, between the coronary band and first phalangeal articulation, vesicles large in the region above heels, looks as if they had a depression in centre, caused by the tissue being eaten away. Thursday, animal begins to feed again, inflammation subsiding, and pus forming. Friday, a piece of dermis from the size of a dollar to the size of an ordinary envelope sloughs away, and becomes detached, exposing underneath a partly raw, ragged, foul-smelling ulcer. Saturday, discharge of foul-smelling pus, numerous soft granulations and an apparent separation of the heels from the foot. Saturday, enlargement of coronary band, entirely around in some cases, a detachment of the hoof from foot immediately below band, in some cases the separation is complete, and when foot is placed upon ground it conveys to the ear the sound produced by one walking barefooted in loose shoes filled with water; little pain present at this stage. Sunday, hoof comes off entirely in many cases, or if detachment is not complete tissues become dry and separative process is established. In a few severe cases sloughing of foot at second phalangeal articulation, and animal has to be destroyed immediately.

Treatment.—Cleanliness, strong antiseptic applications, actual cautery, bandages, perfect rest, laxatives, nitrate of silver solution, and close attention to details. When reparative pro-

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cess commences recovery is rapid, and granulations healthy and easy to control; in sloughing of hoof, in field, destruction; in hospital, new hoof presumably.

Cause.—On the track, when regiment ordered to another State, not possessed of a microscope (wouldn't know how to use it intelligently if owned one), believe that a water insect about one-eighth of an inch long and resembling in appearance the ordinary screw worm, or a small bot, originates and is propagated in the shallow water around the margin of rainwater ponds in Southern Florida. As the animal enters the pond for drink or other purposes it is attacked, the insect penetrates the dermis and attacks the tissues beneath, with the results already mentioned. The insect is known locally as a "leech." I have not had but ten mild cases in twelve hundred horses of the regiment, but have had thirty-two cases in the wagon train of two hundred and sixty-one mules; five cases among the mules died from sloughing of hoof, or were shot to end suffering, one horse left behind and turned into the veterinary hospital at Tampa, I understand. The disease seldom attacks more than one foot of an animal. Of course, the general symptoms of the patient are those found in cases of severe local inflammations.

In two cases there was observed complete sloughing of the plantar nerve and blood vessels on both sides of the foot and immediately above the coronary band. Needless to remark these animals went up the flume; in seventy-five per cent. of the cases the disease did not make its appearance until we were on the train between Tampa and our new camp at Huntsville, Alabama. Horses were never washed in ponds, but some may have passed through.

THE DANGERS FROM THE USE OF ESERINE, PILOCARPINE, ETC.

By HUGH THOMSON, V. S., Shabbona, Ills.

I enclose a report of the death of the stallion Yataghan, by Lord Russell, from rupture of the stomach and strangulated hernia. I send you this report as the symptoms are so very different from those we generally see.

On October 11, 1898, about 6.30 P. M., a gentleman called at my place, saying Yataghan was sick. I asked him how he acted. The symptoms given were that he lies quiet, but occasionally rolls on his back; not very much pain and not bloated. I sent some cannabis indica down, telling him I would be there as soon as I could. I got there about 8 o'clock; found patient on his feet and quiet; had given 4 drachms of cannabis indica.

I inquired into the case and found that the owner had driven the horse about a five-minute gait for five miles; had put him in the barn and given a handful of cornstalks, but he was not warm; shortly after he showed symptoms of colic, when the owner sent for me, and also sent a dispatch for another veterinarian. I arrived and left before he came, as I was in ignorance of the dispatch being sent. On examination I found pulse normal, temperature and respirations slightly above normal; eye bright; no signs of bloating; had passed fæces twice, also urinated. Diagnosed case as indigestion from cornstalks. Gave a ball of aloin, ℥ ii; calomel, ℥ i. I stayed about one hour, and as the patient showed no pain, I left some cannabis indica and belladonna; gave injection of soft water and soap, which he passed with quite a little fæces, but still showed no pain. I left with instructions to call me if he got in any pain, and should the medicine fail to quiet it. After I departed the other veterinarian arrived about 10 o'clock; said the patient was not very sick (so the owner told me), but gave an injection hypodermically of what I should judge was eserine and pilocarpine, or eserine alone. It was not barium chloride, as the skin showed no effects of it at the point of injection. It set up considerable peristalsis; then he went to bed, saying he would be all right in the morning. He was suffering terrible pain, rolling on his back, intense straining, but passing nothing. The owner sent for me three times. I arrived home about 7 that evening, but pulled right out for Shabbona Grove, arriving there at 7.45; got the history of the case since I had seen him last; made an examination; found animal pulseless; strangulation of bowel in right inguinal ring, caused, in my opinion, by the eserine, as it was not there before. Animal lived about 15 minutes.

I held a post-mortem, and found the stomach badly torn, bowels showing there was a strangulation some place; large intestines impacted with food; small intestines completely empty; abdominal cavity full of bloody fluid; also piece of intestines, about six inches long, in the upper part of scrotum, but not extending down its entire depth; this part of the bowel was also empty and showed no mortification, which it would have shown if it had been caused before the bowels emptied out.

The question I wish to ask is: Was this death caused by the eserine? It is my opinion that it was, as I find in stallions it is dangerous to use either eserine, pilocarpine, or barium chloride, for just as sure as you do you will leave yourself liable to produce this accident. The first case I used it on it caused

strangulation and death, and when there is no flatus it should never be used, as it is liable to cause rupture of the stomach or bowels. This case showed no indication for the use of either of these drugs, as the horse was drawn in at the flanks and belly, showing no fermentation, but mild colicy pains, such as would be produced by the cornstalks, as it was something new for him.

PERSISTENT VOMITION AND ACUTE ABDOMINAL PAIN WITHOUT THE USUAL MANIFESTATIONS.

By HUGH THOMSON, V. S., Shabbona, Ill.

On the same night that I called to see Yataghan, my driving mare got sick there with colic. I gave injection of morphine and paid no more attention to her till I got ready to go home, about two hours after arriving. She was in a box-stall eating the bedding. I hitched her up and started home, driving slowly, reaching there at 11.30. Put her in box-stall, when she went to eating hay. I shut the stall door and sat and smoked for about half an hour, when I heard distressed breathing. I ran to the stall, opened the door, and found the animal on her feet, eyes bulging out of their sockets, breathing hard; then vomited about half a pail of food and water. I called the man up in the barn; he held up the lantern and I tapped her, she vomited while the canula was in her, she coughed and choked for over half an hour, and the breathing remained distressed. I gave eserine, grs.ii; strychnine, gr.½, while the canula was in place; also gave injection of glycerine, half a pint, per rectum; waited half an hour, when she had grown worse; vomited and choked several times. The trouble seemed to be in the stomach, as not much gas passed by the canula; gave her sodium salicylate, ℥i, in water, and shortly after ammonia carbonate, one-ounce capsule full. The eserine showed no action, so I gave about six grains of pilocarpine by the trachea; also another injection of glycerine. During all this sickness the animal never laid down, but would occasionally strike with her front feet and cough severely, when food and liquid would pass out of her nose and mouth. In just 10 minutes after giving the pilocarpine the saliva began to flow from the mouth; in about 5 minutes more flatus began to pass, also fæces, which continued for about one hour, and was so severe I gave some atropine and morphia, which stopped it. At just 4.30 I left and went to bed; looked at her about 8; she was quiet, but bloated; gave injection of salt and warm water, pail full, and colchicum, ℥i;

nux vomica, ʒi, belladonna, ʒi—all extracts. At 10.30 I called again and found her in pain, manifested by pawing; never laid down during the entire sickness, bloated badly, pulse intermittent and quick. Gave nitroglycerine and strychnine hypodermically. Went to the office, got barium chloride, ʒi; simple syrup, ℥ii; aquæ, ʒii, and gave it by the mouth with a syringe; also gave injection of glycerine. In about three minutes glycerine passed, causing flatus, which continued about fifteen minutes. In just twenty minutes she showed the effects of the barium chloride; no fæces passed, but flatus continued to pass for one and a half hours. She ate nothing for two days after, when she ate some oats, drank about two quarts of water, the first she had drank since her sickness. She is now feeling good, but looks as if she had been driven through a knot-hole.

I send you a report of this case, it being the second case in an experience of 20 years, when I had recovery where severe vomition took place and the first case that went through such severe sickness without rolling and tumbling continuously. They are both remarkable cases. She has now a terrible cough, due no doubt to the effects of the food vomited.

I sent you a paper last week on the death of Yataghan, and the sickness of my driving mare, and since I wrote you I have an addition to make to the case of the mare.

I fed her Sunday morning, 16th; noticed nothing wrong with her; went to the barn at 11.30 to feed her, intending to give her a little exercise after dinner. I threw her feed into the manger, which I noticed empty, but she did not offer to step up to eat. I looked at her, found her breathing heavily, flapping of the nostrils, and the sound of dropping water on a piece of iron; took her temperature, 103½°; respirations 60; pulse intermittent and 85, ears and legs cold. Upon auscultation heard harsh grating sound. I turned her into a box stall; she laid down on her right side, neck and head stretched out in a straight line; respirations very quick and distressed, suffering greatly; she laid this way quietly, but breathing hurriedly, about 10 minutes, till I got her on her feet. I diagnosed mechanical broncho-pneumonia; gave bellad. ext., ʒi; cannabis indica, ʒii, to allay the irritation of the lungs from the food passing during vomition; gave ℈i capsule acetanilid, followed by bryonia ext., ♏x, every half hour (great homœopathic remedy in distressed breathing with flapping of the nostrils). After she got the third dose she began to breathe easier; cough,

.559B-588B follow p. 588

which was suppressed and painful, ceased by evening. Temperature normal, and ate two quarts of oats and a little damp hay. I gave the bryonia then every three hours till 11 o'clock and nothing else. Next morning she was anxious for her feed, which she ate (three quarts oats), drank some water, and has continued improving, and now has but an occasional cough, good appetite; temperature and pulse normal, also respirations.

I find one of the best remedies in lung troubles and some cases of chronic cough is bryonia. If you use it when indicated, and by studying standard authors on homœopathy, you cannot make a mistake. I also find this a great remedy in the human subject for neuralgic pains in either stomach or chest and pains in the ovaries of women.

APOMORPHIA AS AN EMETIC FOR DOGS.

By FRANCIS ABELE, Quincy, Mass.

Was called by a medical doctor to a pup that had swallowed a large soapy sponge. I say large, for the piece was about 5x3x1½ inches. I advised a zinc sulphate emetic or mustard or soapsuds. The doctor, however, fed the dog gravy, dog bread, meat and potatoes, etc., to overload the stomach; then we gave mustard and water. While waiting on action he spoke of apomorphia as used in his practice. I knew of the drug, but not in a practical way; so urged him to try it. He accordingly injected $\frac{1}{10}$ gr. subcutaneously, and within one minute the dog was sick, retched and vomited. At the second expulsion the sponge came up just as easy as, I should imagine, salt pork would on a seasick man. I then and there decided that henceforth apomorphia would be my companion. I learned another lesson. That thick, viscid food had coated the sponge so that it would slip easily. Here was a pointer alone that might have made the difference between success and failure.

A BULL FRACTURES HIS HUMERUS WHILE COPULATING.

By C. E. BURCHSTED, M. D. V., Exeter, N. H.

September 30th was called to see a young bull, 15 months old, that had injured his leg in serving a cow. I found upon manipulation that there was a fracture of the body of the humerus, which happened as follows: He had not served for quite awhile, and became excited upon approach of cow, and in plunging forward to mount fell to one side, hanging by the nigh leg upon the back of the cow, when, the owner says, he heard a snap. He fell to the ground in a heap. Was this frac-

ture due to the weight of the animal, or in the moment of sexual excitement, from contraction of the muscles when in the act of mounting, or both? I do not offer this as an instructive article, but as an interesting fact.

FISH-HOOK IN DOG'S NOSE.

By FRANCIS ABELE, Quincy, Mass

Party drove up with dog following carriage. He was immediately caught and tied up. Subject, a large Newfoundland. Had a three-pointed fish-hook in nose, another in lip. Would not allow one to touch them, but seemed anxious to brush them off with his paw. Applied tape muzzle and attempted to remove. Barb held so firm in cartilage could not succeed. Dog became unruly. Applied ether; had to use forceps to remove, really tear out, from nose. One from lip easily removed. Dog never realized removal, happy to miss them when he came to.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. BIESER, D.V.S., New York City.

THE ARSENICAL TREATMENT OF OTITIS EXTERNA IN THE DOG AND THE SO-CALLED CAUTERIZATION OF THE AUDITORY CANAL [*Hoffman*].—One of the diseases that often fails to respond to medication is chronic otitis externa, a disease whose chief symptom is the presence of a copious brown or grey, thin or thick, very putrid-smelling aural discharge; pressure elicits peculiar noises from the depths of the ear. After having tried different remedies, also the so-called cauterization in vogue in Bulgaria, without success, H. recommends the arsenical treatment. A valuable dog suffering from the above symptoms received 3 gtts of Fowler's solution daily, with daily increase of dose up to 20 gtts and then a decrease of dose daily to 3 gtts were given, which can then be increased. With this were given one litre thinned milk daily, with white bread, once or twice a week. The success was remarkable, complete cure resulting. But H. insists that the above method must be strictly adhered to for at least six weeks before one can expect improvement. For the proper administration of the arsenic, he suggests the keeping of a daily chart. The Bulgarian method of cauterization alluded to was as follows: A fine linen cloth is dipped in

melted wax and rolled into a funnel before the wax has time to cool. After cooling this funnel is deeply inserted into the ear and set afire at the upper free edge. As soon as the funnel has burned down to the ear itself the fire is put out and the stump of the funnel remaining in the ear is withdrawn, when it is found that the lower end of the improvised funnel is filled with white more or less dried powder composed of the aural secretions, which were changed into powder by the heat and drawn into the funnel's point by suction induced by the burning of the funnel.—(*Berl. Thierärzt. Woch.*)

TETANUS CURED BY INTRATRACHEAL INJECTION OF CARBOLIC ACID [*Von C.*].—B. getting good results from the subcutaneous injection of carbolic acid in human beings suffering from tetanus, C. used it for the same purpose in two mules with the following results: The mules three times a day received intratracheal injections of 3 gr. of carbolic acid crystals in 10 gr. of pure glycerin. In four days the temperature fell from 40.6° to 39.4°, the trismus subsided and the mules began to eat. After eight days the mules refused to allow any further intratracheal medication, so a bolus of 8 gr. of carbolic acid was given internally twice a day. Complete cure resulted in one case in 20 days, in the other in 30 days. [Whether the carbolic acid cured these cases is a mooted question, inasmuch as spontaneous cures have resulted in chronic cases of this kind.] —(*Berl. Thierärzt. Woch.*)

ECZEMA RUBRUM IN A DOG [*Von. E.*].—In treating eczema rubrum in dogs the author on different occasions noticed that a change in diet exercised a beneficial influence upon the course of the disease. In three such dogs that had received different kinds of medication without success a change from a vegetable to an animal diet caused a disappearance of the eczema in fourteen days. These particular dogs had never received animal food before. The author must not be construed to believe that abstinence from animal diet caused the eczema, but he is of the firm belief that a change in diet (from vegetable to animal and eventually from animal to vegetable again) is of decided benefit in the cure of this disease.—(*Berl. Thierärzt. Woch.*)

LACTOPHENIN [*Metzger*].—In M.'s experience lactophenin deserves special notice. It is a powder only soluble in 55 parts of boiling water and in 10 parts of alcohol, externally used in human practice. In veterinary practice M. has only discovered one report upon its use, viz., by Cadéac (Lyon), who declares it

to be an excellent febrifuge in that its effects last longer than other drugs of like character and without disagreeable results. In dogs M. gives 0.25—1 gr.; larger doses of 1—3 gr. used in a spitz dog caused outside of sleepiness no untoward results. In four other dogs (distemper) it had good influence generally and reduced the temperature 2°, sleep occurring quickly; no vomiting; it was well borne. The further course of the illness was so favorable that M. ascribes the results to lactophenin. In a horse that had two days previously received 20 gr. of antifebrin without reducing the temperature below 40½°, 15 gr. of lactophenin brought it down from 41 to 40 and the next day 20 gr. more brought it down 2° in three hours. Its place as an antipyretic is assured.—(*Berl. Thierärzt. Woch.*)

CROUPOUS ENTERITIS IN A DOG.—A dog that had never showed any previous ailments suddenly lost all appetite. He was given a dose of castor oil and died shortly thereafter. On autopsy it was found that a pseudo-membrane 2 mm. in thickness, and of a greyish color, was present, extending from the duodenum to the large colon; severe hyperæmia of the intestinal walls was present; with the exception of some diarrhœa the intestinal canal and stomach were empty.—(*Berl. Thierärzt. Woch.*)

PERSISTENCE OF THE UMBILICAL VEIN.—Upon killing an eleven-year-old cow a cord 50 c. m. long was noticed running from the umbilical ring to the liver; this strand had a lumen, thick wall and was of the appearance and color of the veins of the umbilical cord. It gave one the impression of a blood-vessel of uniform calibre covered externally by a connective tissue layer. 5 c. m. from its entrance into the liver the lumen of the strand became enlarged by reason of the wall of the strand becoming thinner. The strand was evidently a persistent umbilical vein.—(*Berl. Thierärzt. Woch.*)

ITALIAN REVIEW.

RECORDED CLINICS OF PROF. LANZILLOTTI-BUONSANTI, IN "THE CLINICA VETERINARIA."

FISTULÆ OF BOTH TESTICULAR REGIONS.—A five-year-old gelding, used for military purposes, was observed by his rider with pus in the inguinal regions—pus which was oozing from two fistulous tracts in the scrotum, by the cicatrices of castration. These tracts measured five and seven centimetres long; the spermatic cord was not much swollen. Rather

than have recourse to any mild form of treatment, it was decided to perform an operation which the professor had already tried, and which, in these days of aseptic and antiseptic measures, could be given good results. The animal being thrown and placed on his back as for castration, disinfection of the region being thoroughly accomplished, the operation was performed on the left side first. The fistulous tract was enlarged, the spermatic cord severed and drawn out by an assistant, and by careful dissection was isolated from the fistulous structure. A double ligature of aseptic silk was applied on the cord high up, as near the ring as possible, and the part below them was amputated. The cavity left was curetted, and the skin closed by sutures, except for the passage of a drainage tube. The right side was operated upon in the same way. For both, in fact, the interference was similar to that often used in cases of scirrhus cord. The dressings consisted in large irrigations and washings through the drainage tube of a solution of sublimate, 1 per cent. Operated upon on November 23, the tubes were removed on the 27th, and on December 7th the animal was discharged. The cicatrization by first intention had taken place in almost the entire extent of the wound.

ENORMOUS SWELLING OF THE GREAT SESAMOID SHEATH OF THE LEFT HIND LEG.—This unusually interesting case is that of an aged horse which presented on the fetlock of his left hind leg at the location of windgalls an enlargement as big as a man's head, occupying the external and posterior part of the fetlock, extending a little on the inside and running upwards to the lower half of the cannon, where it gradually diminished. The horse was very lame even in walking. Satisfied that no form of treatment, ignipuncture or any other cauterization, could be beneficial, as a last resort extirpation of the tumor was decided upon. The animal was cast and by two incisions, one vertical and one horizontal, the growth was carefully exposed, dissected and removed, without accident, except a small opening of the synovial bursa of the superficial flexor of the phalanges, which was closed by catgut ligatures. Drainage tubes were placed on the upper and lower parts of the wound, which was closed by strong sutures with silk of Firenza, and a treatment established of large irrigations of solutions of corrosive sublimate. After the operation the fetlock had assumed its normal proportions and the animal standing well on his leg. After a few days, to control the motions of the articulation, a light bandage of sterilized gauze was applied. The case progressed

very favorably for nine days, when one morning, as the dressing was about to be changed, the horse, by a sudden move, tore with his front foot all the sutures of the hind leg. The wound was at once disinfected, the protruding granulations curetted, and a new dressing applied with all required antiseptic measures. Some ten or twelve days after the cicatrization was complete. At that time, however, the fetlock began to swell again, and blistering and firing failed to give any relief. An abundant hæmorrhage took place from one of the points of cauterization and on the following day the horse died, with lesions of septicæmia.

LARGE SCLEROTIC GROWTH OF THE RIGHT HIND PASTERN, WITH PARTIAL OSSIFICATION AND PERIOSTITIS OF THE PHALANGES.—After a bruise of the right hind coronet, followed by a swelling which resisted blistering and firing, a two-year-and-a-half-old colt presented on that region a tumor as big as a child's head, and occupying the anterior and two lateral faces of the fetlock, and of the pasterns. The locomotion was much interfered with. The diagnosis of sclerosis of the connective tissue was made and extirpation by dissection decided upon. The colt was cast, the region shaved and thoroughly disinfected and the tumor exposed by first making two vertical semilunar incisions, by which an elliptic piece of skin was removed. The dissection of the skin was easy towards the outside part of the tumor, but when working towards the anterior portion it was found necessary in order to expose the growth entirely to make another incision horizontally. This done, the tumor was carefully removed, and small bony projections were excised with the bone forceps. The tendon of the anterior extensor and its bursa were found and left intact. To prevent the gathering of pus and permit of a better adaptation of the edges of the wounds, a third incision had to be made from the internal end of the horizontal one to the middle of the pastern. The wounds were closed antiseptically and drainage tubes put in place, the after treatment consisting in irrigations of sublimate solution with applications of iodoform and alcoholic solution of resorcine. The result was incomplete, as the cicatrization of the horizonal incision remained imperfect; that of the external wound was complicated with sloughing of the skin; that of the inner side only healed properly. The growth was made of tense, very hard, fibrous tissue with few points of ossification.

SPRINGHALT OF THE LEFT HIND LEG—DOUBLE TENOT-

OMY OF THE LATERAL EXTENSOR OF THE PHALANGES.—This mare had already been operated upon for springhalt by tenotomy of the lateral extensor of the phalanges and made a complete recovery. That operation had been performed in March, 1896, but during the following December the symptoms had returned. A second interference was decided upon, and the mare was operated upon in January, 1897. The parts being well disinfected, an incision 3 centimetres long was made, and the tendon exposed near its point of union with that of the anterior flexor. The section was made with the tenotome and the wound closed with stitches. The results of the operation were immediate, the springhalt disappeared and did not return. Unfortunately the mare took pneumonia a few days after and died.

LUXATION OF THE FEMUR IN A MARE [*By Dr. Cesare Soro*].—The author was called in consultation to see a mare, lame on three legs, from an injury of the left hind leg. That extremity was exceedingly stiff; there was no flexion possible of any of the joints; the anterior face of the wall of the foot rested on the ground. Every part of the leg seemed normal except the coxo-femoral joint, which presented only a slight swelling, which was somewhat warm and painful. Rectal examination proved negative. Locomotion was impossible, and when the animal was urged to move, she was ready to fall, whether from pain or from inability to displace her rigid leg. Suspecting a luxation, immediate reduction was advised, before any serious periarticular inflammation took place. The mare was cast on her right side, and a rope placed on the left leg to secure it as in castration, though on account of its rigidity great care had to be taken for fear of sudden and disastrous complications. The author then having applied some lashes of the whip to the mare, she struggled somewhat and suddenly the leg resumed its flexibility, and the luxation was reduced. A blister applied over the coxo-femoral joint completed the recovery.—(*Clinica Veterinaria*).

THE BUREAU OF ANIMAL INDUSTRY is to make the important innovation of issuing annually instead of biennially the report of its investigations into the diseases of live stock. This is certainly a valuable step, as new facts are developing so rapidly under its scientific researches that progressive American farmers and stockmen cannot stand for such antiquated methods in this important matter.

THERAPEUTIC NOTES.

NAPTHALENE IN MANGE.—One or at the most two frictions of the ointment of napthalene, 1 part, and lanoline, 9 parts, are a sure cure for mange. This ointment might also take the place of all mercurial preparations now in use. Care must be taken to use the napthalene pulverized very fine.—(*Pharm. Zeit.*)

TREATMENT OF TAPEWORMS BY SALICYLIC ACID.—The following is recommended in human medicine and has proved successful in 19 cases out of 20. It might do well in canine practice. The patient has no supper and in the evening receives a dose of castor oil (30 grammes). The next morning another half dose of oil (15 grammes) is given; then an hour later 1 gramme of salicylic acid repeated every hour for the next 3 hours. If after the fourth dose, the tapeworm is not expelled, another half dose of castor oil (15 grammes) is taken.—(*Belg. Med. from R. M. V.*)

INFECTIOUS CONJUNCTIVITIS.—Two or three instillations by day, after washing with a solution of chloride of sodium at 7 per cent., are recommended for infectious conjunctivitis. ℞ Blue of toluidine, 1 gramme; boiled water, 1 litre.—(*R. M. V.*)

AGAINST ITCHING DERMATOSIS.—One of the two following prescriptions is recommended against the troublesome itching frequently observed in some cutaneous diseases, specially in eczema: ℞ Menthol, 10–15 parts; collodion, 100 parts, or ℞ Menthol, ½ to 1 part; olive oil, 1 part; lanoline, 50 parts. After a thorough antiseptic wash made morning and evening, the diseased parts are well dried and a thin coat of the preparation of menthol laid over.—(*R. M. V.*)

RESOLUTIONS OF NEW YORK STATE V. M. SOCIETY,

ADOPTED AT ITS EIGHTH ANNUAL MEETING IN NEW YORK CITY, SEPT. 14–15, 1898.

WHEREAS, The Tuberculosis Commission of the State of New York, intrusted with the control of tuberculosis and glanders in animals, only, is composed of two physicians unacquainted with the diseases of the lower animals.

WHEREAS, This Commission draws in yearly salaries six thousand dollars in addition to office and other expenses for the performance of services which they are incompetent to perform and do not render.

WHEREAS, There is no systematic work done by them in the suppression of tuberculosis in farm animals, but cattle brought

from the west for shipment into the States east and south of New York and here tested by tuberculin are habitually separated into two lots representing the sound and tuberculous, and that the sound are shipped into the New England and other States, while the tuberculous are sold into the herds of the State of New York, carrying destructive disease into our herds and a most dangerous infection into our meat and dairy products; therefore, be it

Resolved, That the New York State Veterinary Medical Society protests against such misappropriation of public funds; against this false show of protection to our herds and to the public health, while both are being sacrificed by the introduction into our barns and fields of the cattle of other States which have been rejected by other markets as tuberculous; and be it further

Resolved, That this Society respectfully represents to the Legislature of the State of New York, that in order to secure the best results in dealing with contagious diseases of the lower animals the work should be entrusted not to physicians who know the diseases of man only, but to accomplished graduates of the best veterinary schools who have made a special study of the many varied maladies of farm animals and of the sanitary measures necessary to their restriction and extinction. The fact that the Legislature has placed so high a value upon veterinary medical practice as to enact a stringent law for its regulation and that a series of acts have been passed with the view of fostering veterinary education and elevating its standard, logically demands that the owners of live stock in New York should receive the benefit of the sanitary science which is the avowed object of such improvement and control.

WHEREAS, It appears that the Commissioner of Agriculture of the State of New York, has under successive administrations employed as chief inspector of contagious diseases, a person who is not a graduate of a veterinary or medical school, and who has never attended such a school, thus violating the spirit, if not the letter of the law, discrediting scientific veterinary medicine, and depriving the stock-owners of the State of the sound sanitary administration which is their right by law; be it

Resolved, That the New York State Veterinary Medical Society at their meeting in New York, September 15th, 1898, protests emphatically against this misappropriation of public funds, and the withholding from the service of the owner of live stock of that knowledge and skill in veterinary sanitary

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science which the Legislature has endorsed, not only by the statutes regulating veterinary-sanitary work, but also by special legislation directed to the improvement and elevation of veterinary education and practice in the State.

WHEREAS, it appears that at the Farmers' Institutes conducted in the State of New York, one Doctor Smead has for several years been employed at State expense to instruct farmers on the subject of tuberculosis in farm animals; and

WHEREAS, The said Doctor Smead has on such occasions systematically done violence to the well-established bacteriological doctrines of the disease and sought to poison the mind of the agricultural community by antagonizing all sound legal measures for the extinction of said disease, or the restriction of its prevalence; therefore, be it

Resolved, That this meeting of the New York State Veterinary Medical Society hereby denounces and condemns the action of the director of the Farmers' Institutes in this State in thus employing public funds in the subornation of sanitary knowledge and work, and in contributing to the maintenance and extension of that contagious disease which is very widely spread among the animals who furnish our meat products and which causes a larger mortality in the human race than any other disorder.

Resolved, That this Society shall express and hereby expresses its grateful thanks to the County Veterinary Medical Society for the courteous reception which they have tendered us, and for the handsome entertainment furnished in the illuminated trip on the trolley car, the luxurious banquet and the many and varied means of enjoyment at the suburban seaside resort.

CORRESPONDENCE.

THE IDIOSYNCRACIES OF THE TUBERCULIN TEST.

BROOKLYN, N. Y., Oct. 17, 1898.

Editors American Veterinary Review:

DEAR SIRS:—I enclose you the following copy of a letter addressed by me to Assistant Sanitary Inspector Black, of this borough, in reference to a matter which is clearly demonstrated in the communication. I would be much pleased to have you express your opinion as to whether I was or was not justified in failing to condemn the animals as tuberculous by the reactions obtained.

Very truly yours,

W. H. PENDRY.

BROOKLYN, N. Y., October 11, 1898.

Hon. R. A. Black, M. D., Assistant Sanitary Inspector, Borough of Brooklyn, N. Y.:

DEAR SIR:—I feel I am in duty bound to call your attention in the matter of the three cows taken from the stable of Joseph Spanier, Rochester Avenue, near East New York Avenue, Brooklyn, on the 4th instant, and destroyed at the offal dock, Newtown Creek, the same day.

These three cows were subjected to a tuberculin test by me on September 3d, using one-half c. c. of the tuberculin as procured from the Department of Health, New York. The following is an extract from my book used at the time of the three cows in question:

Temperature taken at proper intervals during the day previous to inoculation.—Dark red cow, horns, B. of H. tag 3653: 104°, 102⅖°, 104°. Blue cow, white face, B. of H. tag 3663: 102⅗°, 102⅘°, 103⅘°. Red cow, white star, dehorned, B. of H. tag 3664: 103⅗°, 103⅘°, 105⅗°.

Temperature taken at proper intervals during the day after inoculation.—Tag No. 3653: 102°, 103⅖°, 104⅗°. Tag No. 3663: 101⅘°, 102°, 102°. Tag No. 3664: 103⅖°, 103°, 106°.

It will readily be seen that in neither case was there a reaction that could fairly be attributed to the test that would warrant me in condemning the cows; that while in numbers 3653 and 3664 the temperatures were too high during the day previous to the inoculation and could reasonably be attributed to the hot weather, which might possibly interfere in getting a satisfactory result of the test, it will as readily be seen that in the case of the blue cow—tag 3663—there was every reason to be satisfied with the result. On hearing that your Department had condemned them and looking over the result of my work I suggested on the part of the owner that they should be isolated and submitted to a joint re-test, but this fair offer was met with a threat to arrest anyone who might interfere with their removal. There was no desire for a moment on the part of any one to interfere with any official in the discharge of his duty, but I felt that I owed a duty to those who had engaged my services in looking after their interests. I showed your inspectors my record of the test as made by me, and particularly drew their attention to cow with B. of H. tag 3663.

I represented the owners at the post-mortem, and, while I am free to admit that the two red cows showed evidence in a mild form of tuberculosis, the other cow exhibited no evidence what-

ever, all the organs being perfectly normal, except that a portion of the udder showed a somewhat hardened condition, which could not be attributed to tuberculosis. You will find a report of the post-mortems to bear this out. Had this cow been killed at the slaughter house no meat inspector could have found the slightest excuse for cutting her down.

In conclusion I would say that the other two cows showed that my former protest of testing during the hot weather was well founded.

Yours truly,

W. H. PENDRY, D. V. S.

[We consider that cows tagged 3653 and 3664 were not proper subjects for the tuberculin test, as the maximum ratings (104 and 105⅗) were too high to judge of a reaction. The animals should have been isolated and become the subjects of further observation. The fact that the post-mortems bore out the action of the Board of Health has no bearing upon the case; the object of the test was to ascertain the degree of reaction only, and as a tuberculin test the figures do not bear out a justification of condemnation. In the case of the cow tagged 3663 we hold that she is not shown to have reacted, and upon the ratings given should have been passed as non-tuberculous. —EDITOR.]

THE SILVER ANNIVERSARY OF THE A. V. C.

BROOKLYN, N. Y., Oct. 24, 1898.

Editors American Veterinary Review:

DEAR SIRS:—As the REVIEW reaches most of the members of the Alumni Association of the A. V. C., I desire through it to call their attention to the circular letter issued by the Secretary, Dr. Clayton, and to express the earnest hope that it will be received in the spirit in which it is sent, and more particularly that it will meet with the response that it certainly ought. I am just in receipt of a letter from Dr. Liautard, dated Paris, September 30th, in which he expresses the very earnest wish that all members of the Alumni Association will unite in making our Alma Mater's Silver Anniversary a just and worthy tribute of the love we bear her. Surely there are none who will treat with silence such an appeal. It should bring the blush of embarrassment to any one who would so far forget the day that his Alma Mater gave him that which none can take away—an opportunity to place himself in the ranks of an honored profession. Not one should be missing from the scroll of the loving

cup, to be an everlasting tribute of gratitude and affection to the father of the veterinary profession in America.

Dr. Liautard assures me in his letter that he will be here to participate in the celebration of the Silver Anniversary of old A. V. C. How long he will be with us we do not know, and we should accept the opportunity of showing our appreciation of him who has labored so long and so well for our profession.

W. H. PENDRY, D. V. S.,
President Alumni Association, A. V. C.

OBITUARY.

WILLIAM MACHAN, V.S.—Through a most distressing accident this popular veterinarian lost his life on October 11, at his home, 358 West Forty-eighth Street, New York City. On the 5th, while administering an injection to a horse the animal dropped dead, falling upon the doctor and crushing his skull. He lingered until the morning of the 11th, when he died of meningitis. He graduated from the Ontario Veterinary College in 1884, and was a member and regular attendant upon the meetings of the New York State and New York County Veterinary Medical Associations, and though of a retiring disposition, he always took a deep interest in the proceedings, and was ever ready to undertake anything which would be to the advantage of his profession. By his genial disposition he had endeared himself to his fellow-members, who will read the news of his untimely demise with sincere regret.

At the late meeting of the New York State Society the writer sat opposite Dr. Machan and admired his splendid and powerful physique, the picture of robust manhood. To record now his abrupt taking-off emphasizes very forcibly the truth of the proverb that "in the midst of life we are in death."

R. R. B.

FREDERICK WILLIAM TURNER, Ph.G., D.V.S.—This well-known veterinarian died at his home, 91 Lawrence Street, New York City, the latter part of September. He graduated from the A. V. C. in 1890, and had practiced in New York City ever since. He formerly lived in Hackensack, N. J., and had been a member of the U. S. V. M. A. and the New York County V. M. Association.

LEWIS M. BIGNELL, D.V.S.—At Woodstown, N. J., in September, Dr. Bignell died after a long illness. He graduated from the A. V. C. in 1886 and located in Philadelphia, after-

wards removing to Woodstown, where he had built up a very lucrative practive.

A. L. HUNTER, V.S., of Watkins, N. Y., graduate Ontario Veterinary College, 1885, died of pyæmia on August 15. He was a member of the State Society, an active practitioner, and prominent in politics.

SOCIETY MEETINGS.

MAINE VETERINARY MEDICAL ASSOCIATION.

The regular meeting of this association was held at the Elmwood House, Waterville, Oct. 13, at 7.30 P. M., President West in the chair.

Present: Drs. West, Stevens, Joly, Purcell, Freeman, Russell, and Salley.

The minutes of the previous meeting were read and accepted.

The matter of the passage of a veterinary registration bill was discussed. It was decided to make a strong effort to have a bill passed this winter.

On motion of Dr. Stevens, seconded by Dr. Purcell, it was voted to instruct the Secretary to send a circular letter to the quacks practicing in the State, together with a copy of the proposed bill. It is believed that if the quacks understand the nature of the bill they will aid instead of opposing its passage.

Dr. Stevens read a paper upon "Puerperal Septicæmia,"* which brought forth a spirited discussion.

Voted to adjourn to meet at Augusta in January.

I. L. SALLEY, D. V. S., *Secretary.*

NORTH CAROLINA V. M. ASSOCIATION.

This association met in Wilmington, N. C., July 30, 1898.

President C. R. Ellis delivered a very encouraging address, urging the members to aid in having our bill and proper sanitary regulations passed at our next legislature. A petition was presented to the association by the Secretary with the signatures of all the best M.D.'s in North Carolina asking our legislature to enforce strict inspection of animal foods and we feel sure of winning with such co-operation.

Drs. P. H. Morris, Elizabeth City; H. G. Lambert, Asheville, and J. M. Peden, Winston, were elected members and certificates presented.

* Will be published in an early issue.

A vote of thanks was given the Hibernian Benevolent Society for the use of their hall.

Adjourned to meet in December, place of meeting left with the Secretary. J. W. PETTY, *Sec. and Treas.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting was called to order at 8.45 P. M., Wednesday, October 5th, in room 37, New York Academy of Medicine, by President Robertson. The roll-call met with few responses, owing to the very uncertain condition of the weather in the evening, and many of the members having been exposed to the same condition of the elements during the afternoon. The following, however, were present: Drs. Robertson, Hanson, Gill, MacKellar and Ellis.

The minutes of the June meeting were called for by the President, and were read and approved. There were no committee reports ready, so the President passed to the next order of business, and called for papers. No essayist having been appointed for this meeting, President Robertson took the initiative in "case reports" by describing a very interesting case of "keraphyllocele" with which he had been dealing. A very interesting little discussion followed, and finally drifted into a general discussion on general topics. Under the head of "new business" the question of the U. S. V. M. A. coming to this city was brought up, but President Robertson thought it better to delay its discussion until a fuller meeting.

At ten o'clock it was regularly moved and seconded that the meeting adjourn, which was carried by vote.

ROBERT W. ELLIS, D. V. S., *Secretary.*

CHICAGO VETERINARY SOCIETY.

At the third annual meeting of the Chicago Veterinary Society, held October 13, 1898, the following officers were elected: President, James Robertson; First Vice-President, Joseph Hughes; Second Vice-President, L. A. Merillat; Third Vice-President, J. F. Ryan; Secretary, Jos. B. Clancy; Treasurer, J. G. Fish. JOS. B. CLANCY, *Secretary.*

THE MASSACHUSETTS VETERINARY ASSOCIATION.

The October meeting of this association was held at the Boston Veterinary Hospital, corner Albany and East Dedham Streets, Boston, Wednesday evening, October 26, at 7.30.

Demonstrations in casting and controlling were announced to be given by Drs. G. P. Penniman, of Worcester; W. M. Simpson, of Malden; A. G. Walker, of Taunton; J. F. Winchester, of Lawrence. Also a new method of anæsthesia by Dr. John M. Parker, of Haverhill.

NEWS AND ITEMS.

DR. C. H. PEABODY, Charlton City, Mass., reports a case of rabies in a dog caused by the bite of a skunk.

JACOB G. PFERSICK, D.V.S. (McGill, '98), of Shellburne Falls, Mass., was married on Oct. 11 to Miss Helen May Foster, of the same place.

THERE is only one graduate veterinarian in the city of Richmond, Va., a progressive southern city of 100,000 population. Dr. Thomas M. Sweeney is the lonely but fortunate possessor of that distinction.

TWO POPULAR RUBBER PADS are those made by Hallanan (the "Star" and the "Columbia") and by Mooney (the pad with the "sanitary opening"). They are both advertised in the REVIEW, and are worthy the confidence of veterinarians.

THE ONTARIO VETERINARY COLLEGE opened its session on Wednesday, Oct. 12, with an inauguratory address by Principal Smith. We are informed that the attendance is large, coming from the United States, Dominion of Canada, the British Isles, and the West Indies.

GEORGE H. METCALFE, a veterinary surgeon of Syracuse, N. Y., committed suicide by shooting himself through the heart on October 19, in the livery stable of Peter Hopkins, in North State Street. Ill health is given as the cause. He was 26 years old, and had studied under Dr. Henderson, of Syracuse.

DR. LOWE'S HOSPITAL EXTENSION.—From the plans for the addition to the Paterson Veterinary Hospital, what was a very nice infirmary will be converted into a very grand one, 50 x 125 feet, two stories and built of brick. The internal arrangements will be modern in every particular, and the facilities in keeping with the liberal patronage bestowed upon its energetic owner.

DR. GEORGE H. BAILEY, State Veterinarian of Maine, throws a broadside into Secretary Batchelder, of the New Hampshire Board of Agriculture, in the *Maine Farmer*, of October

20, in reply to his derogatory criticism of the value of tuberculin. We published in a recent issue the action of that Board in returning the condemned cattle to the Shedd herd, and this controversy has grown out of that action.

DR. JOHN G. SLEE, until the breaking out of the Hispano-American War veterinary inspector under the Bureau of Animal Industry at the Brighton Abattoir, Boston, is now veterinarian to the Second U. S. Volunteer Cavalry, Seventh Army Corps, stationed at Panama, Florida, from which point he expects to be ordered to Cuba at any moment. Dr. R. W. Grutzman, of Jacksonville, Florida, occupies a similar position in the Second Division of the same corps. Both are recent graduates of the A. V. C.

DRS. W. L. BAKER, of Cortland, N. Y., and H. R. Rider, of Deposit, N. Y., have formed a partnership and leased the veterinary hospital of Dr. Nelson P. Hinkley of Buffalo—the premises having recently been occupied by Drs. Willyoung and Gangloff, who have dissolved partnership and engaged in practice upon their individual accounts. Dr. Baker is President of the New York State Veterinary Medical Society, and Dr. Rider graduated from the New York State College at its last examinations. We wish them every success in their new field.

HORSE SHOW EXHIBITORS' ASSOCIATION.—At the recent Newport Horse Show considerable talk was indulged in by the horsemen present with reference to organizing a horse-show exhibitors' association in the East, and such a society will probably be incorporated during the meeting of the National Horse Show in New York. Among its objects it will have for its aim the outlining of standard horse-show rules and regulations and co-operation with the management of horse shows in the selection of judges and in other particulars where suggestions of exhibitors would be helpful.

SUIT FOR DAMAGES.—John F. Gibson, a New York horse dealer, having written to a gentleman who had refused to consummate the purchase of a horse because Veterinarian E. B. Ackerman, of Brooklyn, had condemned him as being unsound, and saying that the horse did not pass for the reason that he could not afford to give the "tip" which the doctor required, the latter has retained counsel, who are bringing suit for $10,000 damages. The attorneys say it is one of the best and clearest cases they have ever been retained in, and expect to get a substantial verdict for their client. If the dealer is proven

guilty it will be a salutary lesson to others and a great benefit to veterinarians.

HOG CHOLERA ANTITOXIN.—The Bureau of Animal Industry is firm in its faith in the curative and protective power of its antitoxic serum in hog cholera. The use of this serum in infected herds is said to have saved 80 per cent. during the past calendar year, and we are informed that in the last few months the methods of its preparation and use have been considerably improved, so that a higher degree of efficiency is hoped for. It is believed that a practical method of preventing the greater part of loss from swine plague has been finally worked out, although the Bureau awaits the results of the experiments planned for this year before claiming absolute assurance in the matter.—(*Breeder's Gazette.*)

DR. LYMAN MISTAKEN.—In the opening address of Prof. Charles P. Lyman before the students of the Veterinary Department of Harvard University on Oct. 3, occurs the following paragraph, as reported in the Boston *Globe:* "Prof. Lyman's subject was 'A History of Veterinary Medicine.' He said that the Egyptians practiced veterinary surgery in very remote times, but that modern medicine dated from Hippocrates, both for mankind and animals. In the United States there were few schools before 1857. In that year there was established the N. Y. C. V. S. Out of this grew the American Veterinary College, which did not at first admit students. Then came the new school, founded by Harvard University, which gave students a term of three years of nine months each. The University of Pennsylvania and Cornell soon established schools modeled after that of Harvard." What the learned director of Harvard could have meant when he said the American "did not at first admit students" is hard to conceive, as all contemporaneous veterinarians know that it entered into active teaching upon its inauguration, with quite a number of matriculants.

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